A HAND-BOOK

OF

MATERIA MEDICA AND THERAPEUTICS

FOR

DENTISTS AND DENTAL STUDENTS.

BY D. R. STUBBLEFIELD, A.M., M.D., D.D.S.,
Professor of Anatomy and Physiology in the Dental Department
of Vanderbilt University.

"A FAIR TRIAL; THEN, LYNCH HIM."

NASHVILLE, TENN.:
PRINTED AT THE SOUTHERN METHODIST PUBLISHING HOUSE,
FOR THE AUTHOR.
1882.

PREFACE.

No apology is made for entering an almost unoccupied field. Text-books, full enough yet brief, explicit yet terse, are a necessity to students. In the opinion of some, the dentist needs but a few articles of *materia medica;* those who are abreast with the age know better. "Dentistry," said a learned dental instructor, "has had three epochs, viz.: restitutive, when to make a set of teeth fit was the highest perfection; reparative, when to save by filling was the best practice; and the present, when the intelligent treatment of the teeth and surrounding structures, according to the laws of medicine and surgery, is the highest qualification." Scientific dentists know that special therapeutics is but contemptible when compared to the broad principle underlying general medicine. Dental education of to-day looks to generous cultivation.

No claim is urged for cyclopedic exhaustiveness. The effort has been made to present those articles necessary to make a foundation. To this end the work is offered dental students and practitioners. Hopeful of appreciation, to them and to students of medicine in general the volume is consigned by

THE AUTHOR.

NASHVILLE, TENN., Sept., 1882.

DEDICATION.

With Esteem and Love,

I INSCRIBE THIS WORK TO

PROFS. T. A. ATCHISON AND W. H. MORGAN,

My Intelligent Instructors and Venerated Friends.

D. R. STUBBLEFIELD.

A HAND-BOOK

OF

MATERIA MEDICA AND THERAPEUTICS.

ACACIA.—Gum Arabic.

Origin.—Gummy exudation from Acacia Verek, *Guil. et Perott.*, Acacia Senegal, *Willd.*, and other species of Acacia. *Natural order*, Leguminosæ, Mimosæ.

Habitat.—Eastern Africa, principally Kordofan; Western Africa, near the River Senegal.

Constituents.—Arabic acid, combined with calcium, magnesium, and potassium; ash 3 to 4 per cent.

Officinal Preparations, U. S.

Syrupus Acaciæ, used as a vehicle.

Mucilago Acaciæ, used as a vehicle.

Actions and Uses.—Demulcent, slightly nourishing.

ACIDUM ACETUM GLACIALE, B. P.

Glacial Acetic Acid.

ACIDUM ACETUM, U. S., B. P.

Acetic Acid. Specific gravity 1.047. A color-

less liquid, having a strong acid reaction and pungent odor. It is derived from two sources: (1) the acetous fermentation of alcohol, and (2) the destructive distillation of hard wood. The former furnishes the varieties of vinegar, the latter the acid under consideration.

Officinal Preparation, U. S.

Acidum Acetum Dilutum (f℥ij to Oi). Dose, f℥i–ij.

Antagonists and Incompatibles.—Alkalies and their carbonates. In poisoning, they are to be followed by copious draughts of warm water rendered alkaline with soap.

Synergists.—Mineral and vegetable acids.

Actions and Uses.—Glacial acid, a popular caustic, especially for venereal warts; also, vesicant and rubifacient. The diluted acid is refrigerant. Largely used in pharmacy.

ACIDUM ARSENIOSUM.—Arsenious Acid.

Sublimed arsenious acid in masses, U. S.
(See Arsenicum.)

ACIDUM BENZOICUM.—Benzoic Acid.

"White, feathery crystals, of a peculiar, agreeable odor, and warm, acidulous taste; sparingly soluble in cold water, more soluble in boiling water, which deposits it in part on cooling, and very soluble in alcohol." (See Benzoin.)

ACIDUM BORACICUM.—Boracic Acid.

"Glittering, white, scaly crystals, soluble in twenty-six parts of cold and in three parts of warm water, and is freely soluble in alcohol."

Actions and Uses.—Antiseptic and deodorant. It arrests fermentations and putrefactive decompositions, is destructive to minute organisms—bacteria, vibrio, etc. To wounds, it is free from irritating effects, lessens suppuration, and prevents decomposition. Important in antiseptic methods. Just as effective as carbolic acid, and even less irritating than salicylic acid. It is largely used in antiseptic cotton-dressings to wounds.

Mr. Lister used boracic solutions with great success in pruritus ani, ulcers, burns, eczemas, etc.

It may be employed in all the various forms and combinations in which carbolic and salicylic acids are now used.

ACIDUM CARBOLICUM IMPURUM, U. S.

Impure Carbolic Acid.

Used externally, or as a disinfectant.

ACIDUM CARBOLICUM, U. S.

Carbolic Acid. HC_6H_5O.

Synonyms.—Phenic Acid, Oxybenzine, Phenyl Hydrate, Phenol.

Laurent's method (1844) obtained it from coal-tar

by destructive distillation, between 300° and 400° F., and subsequent purification. Occurs in colorless acicular crystals, that become an oily fluid at 95° F.; sp. gr. 1.065; resembles creasote in odor, taste, and other properties; soluble in warm water, less in cold, but is freely soluble in glycerine, alcohol, and ether, in all proportions.

Officinal Preparations, U. S.

Glyceritum Acidi Carbolici. Dose, m.x–xl.
Unguentum Acidi Carbolici (ʒi to ʒi).

Antagonists and Incompatibles.—Alkalies almost check its physiological action. Saccharate of lime, or lime, freely given, is the best antidote. As there is no chemical antidote after absorption, toxic symptoms are to be treated on general principles. Local effect is lessened by *vegetable* demulcents, but not by oils and glycerine.

Synergists.—Corrosives and antiseptics, physiologically.

Actions and Uses.—Generally a local application. Stimulant, sedative, irritant, styptic, antiseptic, escharotic; coagulates the albumen of tissues; obtunds exposed nerve-pulp, or even destroys it.

For itching of the skin from any cause, sponge with: ℞. Acidi Carb., fʒiss; glycerinæ, fʒi; aquæ vel aquæ rosæ, ad fʒviij. M. Ordinary mouth-wash: ℞. Acidi Carb., gtt. viij; aq. menthæ, rosæ vel destillat, fʒi. M. Antiseptic lotion: ℞. Acidi Carbol., ʒi; glycerinæ, ʒi. M. Listerian spray: ℞. Acidi Carbol., fʒi; aquæ, Oi. M.

ACIDUM CHROMICUM, U. S.

Chromic Acid—CrO_3.

Occurs in crimson-red crystals. Formed by the action of sulphuric acid upon a saturated solution of potassa bichromate.

Actions and Uses.—Oxidizing, caustic, and escharotic; antiseptic. The destruction is comparatively painless, but remarkably penetrating and active.

For the destruction of malignant growths, hemorrhoids, warts, etc., should be made into paste with water. Part becomes first yellow, then brownish, then black; the eschar is detached in from twenty-four to forty-eight hours.

Detergent wash for ulcerated gums: ℞. Acidi Chromici, gr. ss; aquæ dest., f℥i. M.

ACIDUM GALLICUM, U. S.

Gallic Acid. $H_3C_7H_3O_5H_2O$.

A silky crystalline substance, obtained by the oxidation of tannic acid. Soluble in three parts boiling and one hundred parts cold water. Unlike tannic acid, does not precipitate with a solution of gelatine. With sesquioxide of iron, it produces a bluish-black precipitate, which loses its color by boiling, and is finally decomposed.

Actions and Uses.—Astringent. Used in the persistent hemorrhage of hemorrhagic diathesis (Todd).

ACIDUM HYDROCYANICUM, U. S.

Hydrocyanic Acid; Prussic Acid. HCN.

ACIDUM HYDROCIANICUM DILUTUM, U. S.

Dilute Hydrocyanic Acid.

(A two per cent. solution of Hydrocyanic Acid in water.)

A colorless liquid having a peculiar odor, and is wholly volatilized by heat.

Dose of officinal two per cent., m.i–v.

Antagonists and Incompatibles.—Metallic salts generally; also, red oxide of mercury and the sulphides. Freshly precipitated sesquioxide of iron has been proposed as a chemical antidote, but it is too slow in its action to be effective. Cold affusion to the spine, inhalation of ammonia, are of greatest utility. Atropia has been proposed by Preyer as the physiological antidote; but it falls under the same objection of slow absorption. Artificial respiration should be promoted at once.

Synergists.—The motor depressants, conium, aconite, etc.

Actions and Use.—Motor depressant, heart sedative. As it is the most powerful and speedy poison, the greatest care should be taken in its administration.

Largely diluted, it is used for neuralgia and troublesome eczemas: ℞. Acidi hydrocyanici diluti, f℥ij; glycerinæ, f℥i; aquæ rosæ, ad f℥viij. M. ft. lotio.

Irritative dyspepsia (where it seems to be most effectual): ℞. Acidi hydrocyanici diluti, m.xxv; bismuthi subnitrat., ʒss; syr. aurantii, fʒi; infus. gentianæ, ad fʒviij. M. Sig. Tablespoonful three times a day *before* eating.

Irritable cough: ℞. Acidi hydrocyanici diluti, m.xij; misturæ amydalæ, fʒvi. M. Sig. Tablespoonful every hour when cough is worst.

ACIDUM MURIATICUM, U. S.

Muriatic Acid. HCl. Sp. gr. 1.16.

ACIDUM MURIATICUM DILUTUM, U. S.

Dilute Muriatic Acid. Sp. gr. 1.038, U. S.; 1.052, Br.

A nearly colorless, strongly acid liquid, emitting white vapors, having a pungent odor. Ordinary table-salt (sodium chloride) is one of the most important sources from which muriatic acid is derived for commerce. When the sodium chloride is distilled with water acidulated with sulphuric acid, the gas evolved is washed, and conducted into water till it absorbs it to the proper density.

Antagonists and Incompatibles.—Alkalies and their carbonates, salts of lime and lead.

Synergists.—Bitters.

Actions and Uses.—Tonic, astringent, antiseptic, antipyretic, escharotic.

The use in the mouth should be followed by alkaline washes to prevent destruction of teeth.

Dyspepsia, where there is excessive production of gastric juice, is effectively treated with twenty-minim doses of this acid, taken before meals.

In the laboratory, to dissolve off zinc and borax, it is used as a "pickle."

ACIDUM NITRICUM, U. S., Br.

Nitric Acid. HNO_3. Sp. gr. 1.42.

ACIDUM NITRICUM DILUTUM, U. S., Br.

Dilute Nitric Acid. Sp. gr. 1.068, U. S.; 1.101, Br.

Synonym.—Aqua Fortis.

An almost colorless liquid, fuming in the air pungent odor. Nitric acid is made by the action of sulphuric acid upon potassium or sodium nitrate; then, by proper dilution, the officinal is obtained.

Antagonists and Incompatibles.—Alkalies and their carbonates, salts of lime and lead.

Synergists.—Bitters.

Actions and Uses.—Chemically pure, escharotic, corrosive; diluted, it is alterative, tonic, astringent, antipyretic.

Obtunds the sensibility of exposed nerve-pulp, but great care must be taken to prevent its effect on the teeth. Local application to ill-conditioned sores. ℞. Acidi nitrici diluti, f℥i; aq. dest., Oij. M. This may be increased in strength somewhat.

ACIDUM NITRO-MURIATICUM, U. S.

Nitro-muriatic Acid.

Take nitric acid, three troy ounces; muriatic acid, five troy ounces. Mix in a glass vessel. When effervescence has ceased, stop well, and keep secluded from light. U. S.

ACIDUM NITRO-MURIATICUM DILUTUM, U. S.

Diluted Nitro-muriatic Acid.

Take nitric acid, one troy ounce and a-half; muriatic acid, two troy ounces and a-half; distilled water, sufficient quantity. Shake the acids together in a pint-measure, occasionally, for twenty-four hours; then add sufficient distilled water to make the diluted acid measure a pint. Keep in a cool place, protected from the light. U. S.

Dose, two to fifteen drops, well diluted.

Antagonists and Incompatibles.—Alkalies and their carbonates, salts of lime and lead.

Synergists.—Bitters.

Actions and Uses.—Supposed to have elective action on the liver, and is used extensively in chronic derangements of that organ. The bath is recommended (six fluid ounces to each gallon of water) for the same disorders.

Sluggish liver: ℞. Acidi nitro-muriatici diluti, f℥ij; succi taraxaci, f℥ss; spiriti chloroformi, f℥iss; aquæ dest., ad f℥viij. M. Sig. Two tablespoonfuls three times daily.

ACIDUM PHOSPHORICUM GLACIALE, U. S.

Glacial Phosphoric Acid. HPO_3.

A colorless, transparent, glass-like mass, obtained from bones with sulphuric acid by an elaborate chemical process. Deliquesces in the air, and is soluble in water and alcohol.

ACIDUM PHOSPHORICUM DILUTUM, U. S., Br.

Dilute Phosphoric Acid. H_3PO_4. Sp. gr. 1.056, U. S.; 1.08, Br.

Besides the methods by U. S. and Br. Pharmacopœias, there is an alternative process of the U. S.: Dissolve a troy ounce of glacial phosphoric acid in three fluid ounces of distilled water, adding to the solution forty grains of nitric acid, boiling it to a syrupy consistence, free from the nitric acid odor, then adding sufficient distilled water to make the diluted acid measure twelve fluid ounces and a-half.

A colorless liquid, of acid taste and reaction. Dose, m.xx–f3i, well diluted.

Antagonists and Incompatibles.—Alkalies and their carbonates, salts of lime and lead.

Synergists.—Bitters.

Actions and Uses.—Tonic, alterative, in rickets and scrofula; excellent adjuvant in cough mixtures and tonics for the aged. The mistaken idea prevails to some extent that by its administration phosphorus may be introduced into the system. Phosphorus

free is the only way to give it, and of this the acid has none. An acidulous drink may be made from it that is very refreshing in diabetes.

ACIDUM SALICYLICUM.

Salicylic Acid. $H_2C_7H_4O_3$.

Occurs as methyl-salicylic ether in the leaves of Gaultheria procumbens and Andromeda Leschenaultii, and is formed from salicin, indigo, and some other organic matters, by adding them to hydrate of potassium, heated to fusion. It is at present extensively prepared, according to Kolbe (1874), from carbolic acid. The acid appears in small acicular crystals, white, inodorous, and of a sweetish, acidulous, and somewhat acrid taste; sparingly soluble in cold, but freely so in boiling water; dissolves freely in wood-spirit, alcohol, and ether, especially when heated.

Antagonists and Incompatibles.—Combination with alkalies destroys its antiseptic power (Kolbe).

Synergists.—Those agents that are germ-destroyers—as carbolic, benzoic, and boracic acids.

Actions and Uses.—Antiseptic, antipyretic, deodorizer.

Less irritating than carbolic acid, it has been substituted for it, in Lister's method, with success. Largely used in treatment of rheumatism.

Disinfectant mouth-wash may be made from one part acid to three hundred parts distilled water; used also in ethereal solutions and dry powder. The salicylate of sodium is now the form preferred, be-

cause of its solubility—sixty or seventy grains, at intervals of half an hour, being thought not too large.

ACIDUM SULPHURICUM, U. S., Br.

Sulphuric Acid; Oil of Vitriol. Sp. gr. 1.843.

Formula: H_2SO_4.

ACIDUM SULPHURICUM DILUTUM, U. S., Br.

Diluted Sulphuric Acid. Sp. gr. 1.082 U. S., 1.094 Br.

Take diluted sulphuric acid two troy ounces; distilled water sufficient quantity. Add the acid gradually to fourteen fluid ounces of distilled water, and mix them. After twenty-four hours, filter through paper, and pass sufficient distilled water through the filter to make the diluted acid measure a pint. U. S.

ACIDUM SULPHURICUM AROMATICUM, U. S., Br.

Aromatic Sulphuric Acid; Elixir Vitriol.

Take sulphuric acid six troy ounces; ginger, in moderately fine powder, one troy ounce; cinnamon, in moderately fine powder, one troy ounce and a-half; alcohol sufficient quantity. Add the acid gradually to a pint of alcohol, and allow the liquid to cool. Mix, and pack the ginger and cinnamon firmly in a percolator, pour on alcohol. Obtain a pint of tincture and mix with acid. U. S.

Antagonists and Incompatibles.—Alkalies and their carbonates, salts of lime and lead.

Synergists.—Bitters.

Actions and Uses.—Sulphuric acid—escharotic, corrosive; diluted—tonic, refrigerant, astringent; aromatic—tonic, refrigerant.

For internal use only the diluted acid may be used; preferably the aromatic.

In night-sweats, the aromatic, in ten to twenty minim doses, is highly recommended.

Summer diarrhea, cholera, and dysentery: ℞. Morph. sulph., ʒi; acidi sulph. dil. vel aromat., fʒij; morph. sulph., gr. i; aq. dest., fʒiv. M. Sig. Tablespoonful every three or four hours.

In lead-colic, the diluted or aromatic acid is efficacious.

The derangement of the digestion from its long-continued use is the contraïndication.

ACID TANNICUM, U. S., Br.

Tannic Acid; Tannin. $C_{14}H_{10}O_9$.

Obtained from the nutgall commercially; but is abundant in nature; appears in yellowish-white masses, or thin glistening scales, strongly astringent and acid reaction; readily soluble in water and rectified spirits, and six parts of glycerine; but sparingly so in ether. In the presence of alkalies or air its solutions turn brown.

Antagonists and Incompatibles.—Mineral acids, salts of antimony, lead, silver, and persalts of iron, and

alkalies, chemically. Vegetable alkaloids and gelatine form insoluble precipitates. Lime-water, with which it forms tannate of lime; oxidizing agents generally, which rapidly change it to gallic acid. Solutions of albumen form with it an insoluble precipitate.

Synergists.—Tonics, bitters; agents that increase waste.

Actions and Uses.—Astringent, styptic. It is the type and essence of vegetable astringency.

Catarrh of the stomach, relaxed state of the mucous membrane, are conditions which indicate the exhibition of this agent. Hæmatemesis, depending on ulcer of the stomach or obstructive disease of the liver and not of inflammatory origin, is another field for its use. Diarrheas of almost every kind, and by some even cholera, may be treated successfully with tannin. It may be given in large doses (grs. x–ʒi) with impunity; ordinary dose, gr. ij–x.

ACIDUM TARTARICUM, U. S., Br.

Tartaric Acid. $H_2C_4H_4O_6$.

Either free or in combination with bases, in grapes, sumach-berries, tamarinds, pine-apples, and other acidulous fruits; also, in other parts of many plants. It occurs in colorless, oblique rhombic prisms or tables, which are inodorous and have a strongly but agreeably acid taste. They are soluble in less than their weight of water; freely soluble in alcohol and wood-spirit, but are insoluble in ether. The American commercial often appears in powdered form.

Officinal Preparations, U. S.

Ferri et Ammonii Tartras. Dose, gr. x–xxx.

Pulveres Effervescentes—Soda Powders.

Pulveres Effervescentes Aperientes—Seidlitz Powders.

Antagonists and Incompatibles.—Alkalies, magnesia, lime, soap, or the alkaline carbonates.

Synergists.—Vegetable (fruit) acids.

Actions and Uses.—Refrigerant; laxative and diuretic (tartrates).

ACONITUM.—Aconite. Monkshood.

Origin.—Leaves and root of Aconitum Napellus, *Lin. Nat. ord.*, Ranunculaceæ.

Habitat.—Mountainous districts of Europe, Asia, and Western North America.

Constituents.—Root: resin, fat, sugar, aconitic acid, about 0.07 per cent. of alkaloids, viz.: aconitia, pseudaconitia, aconina, pseudaconina. Leaves: aconitia, napellina, gum, sugar, albumen, tannin, aconitic acid, ash 16 per cent.

Aconiti Folia—the leaves of Aconitum Napellus, U. S.

Aconiti Radix—the root of Aconitum Napellus, U. S.

Officinal Preparations, U. S.

Aconitia (from the root). Not given internally.

Extractum Aconiti (of the leaves). Dose, gr. ss.

Emplastrum Aconiti (from the root).

Linimentum Aconiti (from the root).

Tinctura Aconiti Radicis. (ʒvi to Oi.) Dose, gtt. i–v.

(Fleming's tincture of aconite root contains ʒiss to Oi.)

Antagonists and Incompatibles. — Alcohol, ether, ammonia, turpentine, digitalis, heat, etc.

In cases of poisoning, wash out the stomach and give stimulants by rectum, or hypodermically, if necessary, and apply external warmth. To overcome the heart depression, inject atropia; by no means assume any but the recumbent posture.

Synergists. — Motor depressants — cold, fatigue, etc.

Action and Uses.—Anodyne, sedative, poisonous, antiphlogistic, diaphoretic.

Fever: ℞. Tinc. aconiti rad., fʒi; spts. nitric. dulc., fʒiiss. M. Sig. Teaspoonful in water every hour or two.

Acute pluritis: ℞. Tr. aconit. rad., fʒij; tinc. opii deodor., fʒvi. M. S. Eight drops in water every hour or two.

For neuralgia: ℞. Tinc. aconit. rad., chloroformi, āā fʒss; lin. saponis, fʒi. M. S. Apply to painful spot.

ÆTHER.—Ether.

A colorless, volatile and highly inflammable liquid, having a peculiar odor; sp. gr. 0.735; neutral, except after exposure to the air; soluble in ten parts of water, freely so in alcohol in any proportion. Obtained by distilling rectified spirit of wine and sulphuric acid, agitating the distillate with calcium

chloride and slacked lime, and then redistilling. Ether absolute, the anæsthetic, is prepared by washing the above with water to remove any spirit, decanting the supernatant ether, and digesting it with freshly burnt lime and calcium chloride; then finally by redistilling.

Ether dissolves fats, oils, resins, some alkaloids, caoutchouc, and gun-cotton.

Antagonists and Incompatibles.—Arterial sedatives, quinia, oxygen, protoxide of nitrogen, the tetanizing alkaloids, strychnia, picrotoxine, etc.

Synergists.—Alcohol and its congeners, chloroform, arterial stimulants, cerebral stimulants, etc.

Actions and Uses.—Local and general anæsthetic (see Anæsthesia), diaphoretic, diuretic, carminative, cardiac stimulant, expectorant, antispasmodic.

Being such a rapidly diffusible stimulant, it is especially useful in cases of acute debility, prostration, etc., either hypodermically or by stomach.

Hoffmann's Anodyne (ether, alcohol, and ethereal oil), or Compound Spirit of Ether, is a well-known agent. Dose, m.x–f℥i.

ALCOHOL.—Alcohol.

Spirit of Wine; Rectified Spirit. Sp. gr. 0.835, U. S.; .838, Br.

ALCOHOL DILUTUM, U. S.

Diluted Alcohol, Proof Spirit. Sp. gr. .941, U. S.

ALCOHOL FORTIUS, U. S. C_2H_5HO.

Stronger Alcohol. Sp. gr. .817, U. S.

A colorless, limpid liquid, free from empyreumatic odor, volatilized entirely by heat. Obtained from the fermentation of the sugars by distillation. It is a solvent for resins, volatile oils, most fats, sugars, alkaloids, organic acids, alkalies, iodine, and many other salts and elements.

Antagonists and Incompatibles. — Fatigue, pain, depressing emotions; sulphates of sodium, magnesium, zincum, cuprum, ferrum; carbonates of potassium, sodium, calcium, magnesium, lithium; chlorides of sodium, hydrargyrum (mitis); cellulin, starch, gum, most sugars, gelatine, and albumen.

Synergists.—All agents which diminish or suspend the functions of the cerebrum, after a preliminary stage of excitement.

Actions and Uses.—Rapidly diffusible stimulant, astringent, and styptic, diuretic, diaphoretic, intoxicant. It is the active principle in all intoxicating fluids, varying in proportion in each.

ALUMEN.—Alum.

Sulphate of Ammonia and Alumina, Ammonia Alum. $NH_4Al2SO_4.12H_2O$.

Known to the ancients; made in the fifteenth century in Italy; afterward in Germany, Spain, and England in the time of Elizabeth. Occurs in transparent crystalline masses; has a sweetish as-

tringent taste. Prepared by treating calcined clay, containing but little iron, until a pasty mass is obtained, then by exposure to the air is converted into sulphate of aluminium, which needs merely to be mixed, while in solution, with ammonium or potassium sulphate to obtain alum.

Alumen Exsiccatum. Dried alum, or alum deprived of its water of crystallization by heat.

Antagonists and Incompatibles.—Alkalies and their carbonates; acetate of lead.

Synergists. — The mineral and vegetable astringents.

Actions and Uses. — Astringent, emetic. Dried alum is a mild escharotic.

Colica pictonum: ℞. Aluminis, ʒij; acidi sulph. diluti, fʒi; syr. limonis, fʒi; aq. dest., fʒiij. M. Sig. Tablespoonful every hour or two. Also, alum-whey, viz.: To a pint of boiling milk add ninety grains of alum powdered; separate the curd, sweeten the whey, if desired. A wine-glassful may be taken every hour or two.

Toothache: ℞. Aluminis, ʒij; spts. nitrosi æther., fʒvj. M.

Spongy gums: ℞. Aluminis, ʒi; vini, Oi; tinc. cinchonæ, fʒss; tinc. myrrhæ, fʒij; mel. rosæ, fʒi; M. S. Rinse or gargle the mouth.

Ulcers of mouth and throat: ℞. Inf. lini, fʒxv; tinc. kino, fʒi; aluminis, ʒij. M. S. Gargle.

AMMONIA.—Ammonia. H_3N.

As "*Spiritus Sal Urinæ*," it was known to the an-

cients; to the earlier chemists, as volatile alkali. First obtained as a gas by Priestly. A trace exists at all times in the air, hence rain-water contains a small amount of it.

It is a colorless, transparent gas, with a pungent, suffocating odor, having alkaline and caustic properties. Highly volatile; sp. gr. 0.59. Water absorbs it rapidly and to a great extent; alcohol and ether readily dissolve it. Salts of many metals form compounds with it. When heated with potash or quicklime, they give off an ammoniacal odor. The compound metal ammonium (H_4N), though resident in the ammoniates, similar to potassium, has no special interest to us, and shall be known through its compounds merely.

Officinal Preparations, U. S.

Aqua Ammonia Fortior (about 26 per cent. of Ammonia).

Aqua Ammonia (about 10 per cent. of Ammonia).

Linimentum Ammoniæ (Aq. Amm., $\frac{1}{3}$; Olive-oil, $\frac{2}{3}$).

Liquor Ammonii Acetatis. Dose, f℥ss–i.

Spiritus Ammoniæ. Dose, m.x–xv.

Spiritus Ammoniæ Aromaticus. Dose, f℥ss–i.

Tinctura Guaiaci Ammoniata. Dose, f℥i.

Tinctura Valerianæ Ammoniata. Dose, f℥i–ij.

Aluminii et Ammonii Sulphas (Alum).

Ammonii Benzoas. Dose, gr. x–xx.

Ammonii Bromidum. Dose, gr. x–xv.

Ammonii Carbonas. Dose, gr. x.

Ammonii Chloridum. Dose, gr. v–xx.

Ammonii Chloridum Purificatum. Dose, gr. v–xx.

Ammonii Iodidum. Dose, gr. v–x.

Ammonii Nitras (used in making Nitrous Oxide.)

Ammonii Sulphas (used in making Ammonio-ferric Alum).

Ammonii Valerianas. Dose, gr. ij–v.

Cuprum Ammoniatum. Dose, gr. $\frac{1}{4}$–$\frac{1}{2}$.

Ferri et Ammonii Citras. Dose, gr. v–x.

Ferri et Ammonii Sulphas. Dose, gr. iij–x.

Ferri et Ammonii Tartras. Dose, gr. v–xxx.

Hydrargyrum Ammoniatum (used in ointments).

Antagonists and Incompatibles. — Vegetable and mineral acids, acidulous salts, earthy salts and lime-water, with the *carbonate;* the acids, soda, potash, and their carbonates, salts of lead, silver and metallic sulphates, with solutions of the *acetate;* the per-salts of iron, acids, and liquor potassæ, with the *benzoate;* alkalies, alkaline earths, and their carbonates, and lead and silver salts, with the *muriate.*

In poisoning, the vegetable acids, followed by free use of oil and demulcents. Therapeutically, the ammoniates are antagonized by veratrum viride, aconite, digitalis, cold and cardiac sedatives generally.

Synergists. — Heat, opium, iodine, the antispasmodics, valerian, asafetida, etc., by the diffusible and aromatic stimulants, as alcohol, ether, etc. The carbonate promotes the activity of the iodides and bromides.

Action and Uses. — Ammonia preparations generally are diffusible stimulants, especially the carbonate and aq. ammon. (secondarily, irritant); dia-

phoretic in febrile conditions (liq. acetat.), emetic (carbonate, in full doses), expectorant (muriate, carbonate), tonic, in neuralgia (chloride).

Stimulating expectorant: ℞. Amm. muriat., ʒss; syr. tolutan., fʒiss; spts. vini gallici, fʒi; aq. destillat., ad fʒvi. M. S. Teaspoonful every hour. If much irritation and coughing is present, add about two or three grains of sulph. morph.

Myalgia: ℞. Amm. muriat., ʒi; ext. cimicifugæ, fʒij; syr. simp, aq. laur-cerasi, āā fʒi. M. S. Teaspoonful three or four times a day. The ammonia liniments are effective and popular.

Headaches, dependent upon adynamic conditions, *inhalation of vapor* of ammonia.

For snake-bites, insect-bites, etc., the aq. amm.

ANÆSTHESIA AND ANÆSTHETICS.

Anæsthesia is a condition of temporarily abolished sensation. Though discovered but recently, it is of unquestioned benefit to mankind. To the surgeon it is invaluable, and scarcely less so to the accoucheur and dentist.

It is produced by the rapid diffusion of certain agents in the blood, or, locally, the benumbing effect of certain applications. These agents may be introduced by all the avenues through which medicaments enter the system—the lungs stomach, rectum, vagina, sub-cutaneously, etc. For obvious reasons, when nothing contraïndicates, the lungs afford the best point of entrance, and is resorted to usually.

It is not without danger. If the circulatory or

respiratory systems are of doubtful integrity, much less diseased, it is too dangerous to be resorted to, except under thorough advisement.

There are certain precautions, other than physical examination, that must not be neglected. The clothing and posture of the patient, the surroundings as to ventilation, the individual idiosyncrasies, if any, the absolute purity of the agent, the reasonable means for resuscitation convenient—all must be anticipated. Very little food should have been taken before—usually at the previous meal-time—but fasting should not be prolonged to the point of increasing the danger.

Another danger arises from the erethism occasionally produced. Operators, especially dentists, should guard themselves by the presence of a third party, as charges have been made productive of a tragedy in more than one instance.

Anæsthetics, or anæsthesiants, embrace all hydrocarbons, though but few of them are available. They are divided into two classes—local and general. The local—cold (by freezing mixtures or evaporation of ether), veratria, aconitia—act upon the sensory nerves of the part they are applied to; the general—chloroform, ether, nitrous oxide, chloral hydrate, nitrite of amyl, amylene, bichloride of methylene, opium, alcohol, and all narcotics—act upon the brain, with a preliminary stage of excitement. As the rapid and deep breathing of air is anæsthetic, it will facilitate matters to have the patient practice it several minutes before administering any anæsthetic.

First, chloroform. None but reliable, purified chloroform should be used. After it is seen that none of the contraïndications exist, the patient should be comfortably placed, on table or chair, as near the supine position as possible, clothing loosed, especially at the throat. The operator should, by cheerfulness, allay the fears of the patient as much as possible.

As the first effect of this agent is to exhilarate, it is well to give a good drink of some alcoholic before commencing, if it is not disagreeable to the patient. In this way the effect is more readily obtained and more easily prolonged.

As the important fact to be regarded in the administration of this agent is to secure only the admixture of three and one-half per cent. of chloroform vapor in pure air, the simplest form of inhaler is necessary. A handkerchief, or napkin, upon which from a few drops to half a drachm has been poured, is the usual and convenient, as well as satisfactory, manner. The mouth and nose should be guarded against the irritation with oil or some unguent. As this vapor is four times the density of air, the cloth may close down and shut off all but the vapor, and must be carefully attended to.

The state of the circulation and respiration is to be carefully watched throughout.

It must be remembered, in the use of this and all other anæsthetics, that the effect is desired for a certain end, and the operator must know just what he wants in any definite case.

Suspension of the respiration must be met by

withdrawal of the vapor, inversion of patient, according to Nélaton—heels up and head down—and artificial respiration, either by rolling the patient on the side, and then on the back, about fifteen to eighteen times a minute, or by raising the arms above the head and then depressing them to the chest-wall at about the same rate. Favor circulation of blood to the brain and a reïnstatement of respiration. Artificial heat should be applied; cold-water douche, etc., prohibited. The tongue should be drawn forward and held, if retracted. Faradization of the respiratory muscles, acupuncture with the galvanic needle, and injection of ammonia, have been recommended.

The use of this agent is not advised, for death has often occurred—oftenest in the dental chair.

Ether comes next, and popularly outranks chloroform in the surgery of America.

In its administration the same precautions should be observed—free breathing, no physical contraïndication, free ventilation, recumbent posture, etc. It is highly inflammable, and no flame should be near. In this, the *purest ether* only should be used. The air should be excluded as nearly as possible, as less excitement and more rapid effect follows if only the vapor is inhaled.

It takes longer, but is safer than chloroform. A cone specially prepared, or one readily formed with a newspaper inclosing a sponge or napkin, closely fitting the nose and mouth of the patient, is used.

Remember it is the *effect*, and not the quantity inhaled, and the free use of it is recommended.

The irritation of the fauces and throat, and fear of suffocation, will gradually pass off as the ether is absorbed.

If arrest of respiration occur, artificial respiration, as described under Chloroform, and inversion of the body according to Nélaton, should be resorted to as the most promising expedients.

The use of this agent is advocated. The profound anæsthesia manifested by loss of sensibility of cornea, loss of muscular power, deep sleep, etc., may be prolonged to any necessary extent with impunity. Then there is the *first anæsthesia*, especially useful to the dentist or minor surgery, when the first loss of consciousness and sensation is taken advantage of. The patient escapes all pain, and yet avoids the nausea and sickness following the full effect.

Comparative Utility of Chloroform and Ether.

Chloroform is more pleasant to inhale, less irritant, not inflammable like ether, and can be used at night better; its stage of excitement is shorter; its effect is more rapid; its narcosis is more sustained; but all these are more than counterbalanced by the danger in its use. *Ether should be preferred in all cases except in labor.*

Next, nitrous oxide, or laughing-gas—a protoxide of nitrogen. A colorless, sweetish-tasting gas; sp. gr. 1.527; consists of one equivalent each of oxygen and nitrogen. It may be condensed to a liquid by cold and pressure, thus favoring transportation.

The gas is inhaled from a rubber receiver. The effect is rapid—sufficient for minor operations—but

transient. It is thought to be entirely free from danger, though usually followed by slight headache and some nervousness. From a frightened look to a deadly pallor the face passes under its administration, and this is presently replaced by a bluish tint, resembling the appearance of asphyxia. Carbonic acid accumulates. Animals live no longer in it than in pure nitrogen. Its administration must be preceded by the same precautions before mentioned.

The other hydro-carbons classed as anæsthetics are not used as such for general anæsthesia, and their properties and actions may be ascertained by reference to them.

ANTHEMIS.—Chamomile.

Origin.—Flowers of Anthemis nobilis, *Lin.* *Nat. ord.*, Compositæ.

Habitat.—Southern and Western Europe; cultivated.

Constituents.—Volatile oil, bitter principle (anthemic acid?), resin, little tannin, etc.

Officinal Preparations, U. S.

Infusum Anthemidis. Dose, f℥ij, as tonic; emetic, *ad lib.*

Oleum Anthemidis. Dose, gtt. v–xv.

Actions and Uses.—Stimulant, tonic, carminative, nervine, emmenagogue.

The country people use the infusion for dyspepsia. The oil is, latterly, thought to have a lowering effect on reflex irritability of the spinal cord. A poultice is often made of the flowers.

ANTIMONIUM.—Antimony, Sb.

Though known to the alchemists, Basil Valentine made known the method of obtaining it. The native antimony occurs in France and Germany. A bluish-white, very brittle metal, usually lamellar in structure; sp. gr. about 6.7: unchanged by exposure to the air.

Officinal Preparations, U. S.

Antimonii Sulphuretum—the purified tersulphide (used in making the oxide of antimony).

Antimonii Oxidum. Dose, gr. ij–iij.

Antimonii et Potassii Tartras (tartar emetic). Dose, gr. $\frac{1}{12}$–i.

Antimonium Sulphuratum (sulphurated antimony). Dose, gr. i–xx.

Antimonii Oxysulphuretum (Kermes mineral). Dose, gr. ss–i.

Pilulæ Antimonii Compositæ. (Six grains of the mass contains one grain each of calomel and sulphurated antimony.) Plummer's Pills. Dose, 1 to 5 pills.

Vinum Antimonii (gr. ij to f℥i). Dose, gtt. x; emetic, f℥i.

Emplastrum Antimonii (tartrate of antimony and potassium, 1 part in 4).

Unguentum Antimonii (do., do., 1 to 4).

Syrupus Scillæ Compositus (contains tartar emetic gr. i to ℥i).

Antagonists and Incompatibles.—Tannic and gallic acids, and infusions containing them, form insoluble tannates. Alkalies and the salts of lead decompose

tartar emetic; physiologically, opium, alcohol, ether, etc., together with the antispasmodics generally.

Antidote: Tannic acid (green tea, catechu, rhatany, rhubarb, etc.).

Synergists.—The minerals that promote waste; also, the emetics and cathartics, and depressing agents generally—as veratrum viride, etc.

Actions and Uses.—Emetic, sedative, antiphlogistic, diaphoretic.

In acute catarrh (nasal, pharyngeal, and bronchial), small doses repeated (from one-twentieth to one-twelfth of a grain), combined with morphia, is very effective. ℞. Antimonii et potassii tartrat., gr. ss; morph. acetat., gr. ss; aquæ dest., f℥ij. M. Sig. Teaspoonful every hour or two.

In acute inflammatory and febrile diseases, tartar emetic in minute doses ($\frac{1}{16}$ gr.), frequently repeated, is of undoubted benefit. Combined with morphia and muriate of ammonia, it makes an excellent cough mixture, with tolu syrup as a vehicle.

The depressing effect of this agent (tartar emetic being the type) has almost occasioned its disuse.

AQUA.—Water. H_2O.

This chemical compound—two equivalents of hydrogen to one of oxygen—is one of the most abundant and important in nature. It ranges from a comparatively pure state (rain-water) to any varying condition of impurity. It is the vehicle of many natural and artificial substances, because of its great solvent power. Its great importance in the human

economy may be readily and fairly inferred by its abundance there, constituting from two-thirds to three-fourths of its weight. It may be colorless, and devoid of both taste and smell, or of any color, any taste, any smell—depending upon the materials dissolved in it. But while natural water, of springs, rivers, and cisterns, may be used for some pharmaceutical purposes, still it is usually distilled, completely purified, for medical uses. Unless specified to the contrary, distilled water is meant when water is called for in prescriptions, etc.

Mineral waters (*i. e.*, natural waters containing some mineral or medical substance naturally), and medicated waters (*i. e.*, those with medicines dissolved in them by the pharmacist), are left out of this article. They are innumerable, and all of any importance have analyses showing the substance or substances in them, whose actions and uses may be easily ascertained. It would make this article too long to enumerate them, much less to describe them. The only officinal preparation is *aquæ destillata*, mentioned above.

Action and Uses.—Externally: Refrigerant, febrifuge (cold-bath, cold affusion, cold packing), rubifacient, counter-irritant (hot-bath, hot fomentation), tonic (both hot-bath and cold-bath, discreetly applied in each case), relaxant, depressant (hot-bath, varying with duration, in effect).

Internally: Laxative, purgative (cold, especially with a little common salt added), emetic (warm, drunk to distension), diaphoretic (both, especially warm), diuretic (cold, drunk freely).

The use of water promotes digestion by stimulating the secretion of gastric juice, and aiding the passage of peptones into the blood (Ringer).

It is not to be taken in any but small quantity *during* meals; but freely taken *before* or some time *after* meals, obtains the best results.

Another important use is to diminish bodily temperature. Cold water, though it abstracts a certain amount of caloric from the system, does not act as efficiently as hot water in its ultimate effects. The *rationale* is that the blood is called from the *heat-making* area to the *heat-losing* area, where, coming in contact with the air, the caloric is rapidly abstracted.

ARGENTUM.—Silver. Ag.

Silver is widely diffused in nature as native silver and in combination with many other metals. It is a brilliant, white metal; sp. gr. 10.57; tarnishes in the air by combining with the sulphuretted hydrogen. Its compounds only are used in pharmacy.

Officinal Preparations, U. S.

Argenti Nitras. Dose, gr. $\frac{1}{6}$–ij, in pill.
Argenti Nitras Fusa. For external use.
Argenti Oxidum. Dose, gr. ss–ij, in pill.

Antagonists and Incompatibles.—The soluble chlorides and substances containing them—salt, mineral-water, etc.—form an insoluble chloride of silver. The following acids and their salts are chemically incompatible: Sulphuric, muriatic, tartaric, and sul-

phurous; alkalies and their carbonates; astringent infusions and lime-water.

Table-salt is its chemical antidote, freely given as to act secondarily as an emetic. Therapeutically, those agents which promote constructive metamorphosis.

Synergists.—Agents promoting waste—as mercury, iodides, etc.

Action and Uses.—Astringent, caustic, callyrium.

To stimulate weak or unhealthy granulations, the nitrate of silver in varying strength of solution is recommended. The internal use of silver is very limited, because of the consequent discoloration. The oxide has been highly recommended as a nervous sedative, and a hæmostatic in menorrhagia.

ARNICA.—Arnica.

Origin.—Flowers of Arnica Montana, *Lin. Nat. ord.*, Compositæ.

Habitat.—Europe, Northern Asia, and America, in mountainous districts.

Constituents.—Volatile oil a trace, resin, arnicin (amorphous, yellow, acrid), etc.

Officinal Preparations, U. S.

Extractum Arnicæ. Dose, gr. v–x.

Emplastrum Arnicæ (extract gr. ss).

Tinctura Arnicæ (℥iij to Oi); used externally.

Antagonists and Incompatibles.—Ammonia, alcoholic stimulants, opium, camphor, etc.

Synergists.—Aconite, veratrum viride, digitalis, arterial sedatives generally.

Action and Uses.—Stimulant, diuretic, vulnerary, irritant, antipyretic (in full doses).

There is much difference of opinion concerning its properties and uses. It is used as application to bruises and strains, especially in domestic practice.

ARSENICUM.—Arsenic. As.

Arsenicum is sometimes found native, but usually occurs in combination with other metals, sulphur, and oxygen. It has a steel-gray color, high metallic luster, sp. gr. 5.7 to 5.9, volatilizes under heat without fusion, and if air is present oxidizes to arsenious oxide. This arsenious oxide—the only form known to the people—is called white arsenic and arsenious acid.

Acidum Arseniosum. Hydrate arsenious oxide in masses, U. S. Dose, gr. $\frac{1}{20}$ (twentieth).

Officinal Preparations, U. S.

Arsenici Iodidum. Dose, gr. $\frac{1}{8}$ (eighth).

Liquor Arsenici et Hydrargyri Iodidi (m.xx contains arsenic gr. $\frac{1}{24}$ (twenty-fourth). Donovan's solution. Dose, m.x.

Liquor Arsenici Chloridi. (Acid. arsen., gr. iv to f℥i.) Dose, m.v.

Liquor Potassii Arsenitis. (Arsen. acid., gr. iv to f℥i). Fowler's solution. Dose, m.ij–v.

Liquor Sodii Arseniatis. (Arsen. acid., gr. iv. to f℥i.) Dose, m.v.

Sodii Arsenias. Dose, gr. $\frac{1}{12}$ (twelfth).

Antagonists and Incompatibles.—Salts of iron, magnesia, and lime, and astringents; in poisoning, *freshly prepared* hydrated sesquioxide of iron, and magnesia freshly calcined. When Fowler's solution has been taken, the ferric salts are to be used. The gastro-enteritis and nervous symptoms are to be treated on general principles, and followed by diluents, skimmed milk, alkaline mineral-waters, etc.

Synergists. — Agents that promote constructive metamorphosis.

Action and Uses.—Locally, escharotic; generally, alterative, tonic, antiperiodic, corrosive poison (full doses).

As an escharotic, it acts by destroying the tissues; but, owing to its great diffusive power, there is danger of systemic poison.

As an alterative, it acts by combining with the tissues, displacing the phosphorus, as it is of the same group, and takes its place along with the histological elements. (Gubler.) Hence its power of remaining inert in the system.

As a secondary effect to this, it is tonic.

As an antiperiodic, it acts probably by reason of its germicide power, indirectly becoming a tonic like quinine.

As a corrosive poison, it acts locally upon the coats of the stomach, no matter how it may have found its way into the system, giving rise to symptoms closely analagous to Asiatic cholera. These symptoms generally follow a toxic dose, but in exceptional cases the force of the poison is expended on the nervous system.

Dentists use arsenic to kill exposed nerve-pulps. While this practice may not result disastrously, it is not advisable, because absorption is likely to occur. If it does, it combines with the bone—the triarseniate of lime displacing the tribasic phosphates—or it may bring about caries of the bone; and systemic poison may result from absorption.

As a remedial agent, it should be given usually *after* meals, on a full stomach.

Irritative dyspepsia, indicated by red, pointed tongue, poor appetite, distress after meals, food causing intestinal pain, colic, desire to go to stool—one-drop doses of Fowler's solution *before* meals is efficacious.

Chronic gastric catarrh, gastralgia, enteralgia, chronic diarrhea, yield kindly to these one-drop doses, in a large proportion of cases.

Iron is very much assisted by arsenic in chlorosis.

In chronic skin affections, Fowler's solution is empirically used. If syphilis is present, Donovan's solution (mercury, iodine, and arsenic) is better.

In malarial fever, arsenic ranks next to quinia, and is happily combined with it in intractable cases.

To destroy pulp of nerve: ℞. Acid. arsen., gr. ij; sulph. morph., gr. i; creasoti, q. s. M. ft. pasta. S. Apply small quantity on a bit of cotton.

Depilatory: Quicklime, ½ ounce; yellow sulphide of arsenic, 20 grains; starch, 180 grains. This is supposed to be the same depilatory to which the Egyptian women resorted to remove the hair from the pubes.

ASAFŒTIDA—Asafetida.

Origin.—Gum resin from (1) Ferula Narthex, *Boissier;* Narthex Asafœtida, *Falconer.* (2) Ferula Scorodosma, *Benth. et Hook.;* Scorodosma Fœtidum, *Bunge. Nat. ord.*, Umbelliferæ, Orthospermæ.

Habitat.—1. Western Thibet, and probably Cashmere. 2. Persia, Turkistan, and Afghanistan.

Constituents.—Aside from impurities, 3 to 9 per cent. volatile oil, 20 to 30 per cent. (sometimes more) of gum, and 50 to 70 per cent. resin, of which a small portion (3 to 4 per cent.) is insoluble in ether, and which contains a little ferulaic acid.

Officinal Preparations, U. S.

Mistura Asafœtidæ (ʒiv to Oi), milk of asafetida. Dose, fʒss–i.

Tinctura Asafœtidæ (ʒij to Oi). Dose, fʒss–i.

Pilulæ Asafœtidæ (each, gr. iij). Dose, 2 to 4 pills.

Pilulæ Aloes et Asafœtidæ (each, gr. $1\frac{1}{3}$).

Pilulæ Galbani Compositæ (each, gr. ss).

Suppositoria Asafœtidæ (each, gr. v, or m.xv of tincture).

Emplastrum Asafœtidæ.

Antagonists and Incompatibles.—Acids, neutral salts, cold, and arterial sedatives.

Synergists.—The gum-resins, the balsams, the aromatics, essential oils containing sulphur and phosphorus, and alcohol and ether.

Actions and Uses.—Stimulant, expectorant, laxative, antispasmodic.

Has been used for a variety of affections, but is

now only prescribed in flatulence, dyspepsia, hysteria; also, sobering-up mixtures for inebriates.

AURANTIUM.—Orange.

Origin.—Peel and flowers of (1) Citrus Vulgaris, *Risso*, bitter orange; (2) Citrus Aurantium, *Risso*, sweet orange. *Nat. ord.*, Aurantiaceæ.

Habitat.—Northern India; cultivated in sub-tropical countries.

Constituents.—Peel: volatile oil, hesperidin, in the white zest a principle giving a black color with ferric salt. Flowers: volatile oil, mucilage, bitter extractive.

Aurantii Amari Cortex—the rind of the fruit of Citrus Vulgaris.

Aurantii Dulcis Cortex—the rind of the fruit of Citrus Aurantium.

Aurantii Flores—the flowers of Citrus Aurantium and Vulgaris.

Officinal Preparations.

Aqua Aurantii Florum. Used as a vehicle.
Syrupus Aurantii Florum. Used as a vehicle.
Confectio Aurantii Corticis. Used as a vehicle.
Syrupus Aurantii Corticis. Used as a vehicle.
Tinctura Aurantii. Dose, f℥i–ij.
Infusam Gentianæ Compositum. Dose, f℥ss–ij.
Tinctura Cinchonæ Composita. Dose, f℥i–ij.
Tinctura Gentianæ Composita. Dose, f℥i–iv.

Action and Uses.—The flowers: stimulant, antispasmodic, the oil being called the oil of Nercoli.

The peel: stimulant, tonic. Used as a flavoring and vehicle principally.

BALSAM PERUVIANUM.—Balsam Peru.

Origin.—An empyreumatic liquid balsam from Myroxylon (Myrospermum, *Royle;* Toluifera, *Baillon*) Pereiræ, *Klotzsch. Nat. ord.*, Leguminosæ, Papilionaceæ.

Habitat.—Central America.

Constituents.—Cinnamein or benzylic cinnamate, about 60 per cent.; resin, about 32 per cent.; benzalcohol, benzoate, stilbene, cinnamic and benzoic acids.

Action and Uses.—Stimulant, expectorant, vulnerary. Checks copious and unhealthy secretion.

In bronchitis, f℥i in emulsion at a dose.

BALSAM TOLUTANUM.—Balsam Tolu.

Origin.—A semifluid balsam from Myroxylon (Myrospermum, *Richard*) Toluifera, *Kunth;* Toluifera Balsamum, *Miller. Nat. ord.*, Leguminosæ, Papilionaceæ.

Habitat.—Venezuela and New Grenada.

Constituents.—Resins, benzylic benzoate, benzylic cinnamate, tolene 1 per cent., cinnamic and benzoic acids.

Officinal Preparations, U. S.

Syrupus Tolutanus (Tinc. f℥ij–Oi). Dose, f℥ss–i.

Tinctura Tolutana (℥iss–Oi). Dose, f℥i.

Tinctura Benzoini Composita (Tolu ℥ss–Oi).

Action and Uses.—Stimulant, expectorant, vulnerary.

Agreeable flavoring to cough mixtures, especially in the form of syrup.

BELLADONNA.—Belladonna.

Origin.—Leaves and root of Atropia Belladonna, *Lin. Nat. ord.*, Solanaceæ.

Habitat.—Central and Southern Europe; in woods.

Constituents.—Atropia 0.2 to 0.6 per cent., belladonnia, starch. Atropia, $C_{17}H_{23}NO_3$, white, crystalline, soluble in ether, chloroform, alcohol, and water; yields tropic acid and tropina.

Leaves (in addition to above): mucilage, wax, albumen, asparagin (?), ash 14 per cent.

Belladonna Folia—leaves of Atropa Belladonna, U. S.

Belladonna Radix—root of Atropa Belladonna (two years old), U. S.

Officinal Preparations, U. S.

Tinctura Belladonnæ (from leaves, ʒij–Oi). Dose, gtt. x–xx.

Extractum Belladonnæ (inspissated juice of leaves). Dose, gr. ss–ij.

Extractum Belladonnæ Alcoholicum (of the leaves). Dose, gr. ss–ij.

Extractum Belladonnæ Radicis Fluidum. Dose, m.ij.

Emplastrum Belladonnæ (from the root).

Unguentum Belladonnæ (from Ext. Belladonnæ, ʒi–ʒi).

Suppositoria Belladonnæ (from Ext. Belladonnæ Alc., gr. ss).

Atropia (from the root).
Atropia Sulphas.
} Dose, gr. $\frac{1}{60}$ (sixtieth), or hypodermically, gr. $\frac{1}{120}$ (one hundred and twentieth).

Antagonists and Incompatibles.—Chemically, fresh animal charcoal, tannin, vegetable astringents, etc.; physiologically, opium, calabar-bean, tartrate of antimony and potassa. In case of poisoning, rapidly acting emetics should be used at once. Purgatives containing the chemical antidotes should be administered to neutralize any poison remaining in the intestinal canal. Artificial respiration, cold douches, counter-irritants, and diffusive stimulants, should be resorted to for narcotism.

The physiological antidotes, being poisons, should be exhibited with great caution.

Synergists.—Electricity, strychnia, ergot, digitalis, cimicifuga, stramonium, and hysocyamus.

Action and Uses.—Locally, sedative, applied directly; generally diuretic, dilating the pupil, narcotic. Care must be taken to prevent hurtful effects from absorption when applied locally. Its active principle, atropia, is given by mouth or hypodermically.

In mercurial stomatitis, gastralgia, pyrosis, irritative dyspepsia, atropia is recommended: ℞. Sulph. atropiæ, gr. i; sulph. zinci, ʒss; aq. dest., fʒi. M. S. Three to five drops twice or thrice a day.

Habitual constipation yields readily to the extract of belladonna combined with other purgatives: ℞.

Ext. belladonnæ, ext. nuc. vom., ext. physostigmat., āā gr. iij. M. ft. pil. No. vi. S. One at bedhour.

Acute nasal catarrh, with profuse secretion: ℞. Tinc. aconit. rad., f℥i; tinc. belladon., f℥ij. M. S. Four drops in water every hour or two. This is good for sore throat also.

Recommended in certain nervous disorders.

Sick headache, due to or accompanied by spasm of the arterioles, manifested by excessive pallor, vertigo, and tinnitus aurium: ℞. Sulph. atropiæ, gr. ss; chinoidin., ℥i. M. ft. pil. No. xl. Sig. One pill two or three times a day.

Neuralgic dysmenorrhœa, nocturnal incontinence of urine, seminal losses, and certain cutaneous neuroses, are all benefited by this agent.

For sweating of phthisis, in doses of one-sixtieth of a grain, as recommended by Bartholow, in his "prize essay," atropia is used with benefit.

Local application of belladonna arrests excessive secretion.

BENZOINUM.—Benzoin.

Origin.—Balsam from Styrax Benzoin, *Dryander*. *Nat. ord.*, Styraceæ.

Habitat.—Sumatra, Java, probably; also Siam.

Constituents.—Benzoic acid 12 to 24 per cent. (usually fragrant from adhering volatile oil, sublimable, sparingly soluble in cold water), vanillin, cinnamic acid, several resins, yielding with potassa (melted) parabenzoic acid, protocatechuic acid and pyrocatechin.

Officinal Preparations, U. S.

Acidum Benzoicum. Dose, gr. x–xxx. (Enters into Tinc. Opii Camphorata.)

Ammonii Benzoas. Dose, gr. x–xxx.

Tinctura Benzoini. Dose, f℥ss–i.

Tinctura Benzoini Composita. Dose, f℥i–ij.

Unguentum Benzoini (Adeps Benzoatus, Br.).

Action and Uses.—Stimulant, expectorant.

Administered by means of spray atomizer, is useful for bronchitis (deep-seated).

BISMUTHUM.—Bismuth. Bi.

A brilliant grayish-white metal, with a distinct roseate tinge, found in the mines of Saxony, associated with cobalt, nickel, and silver ores. It is purified for commercial purposes by heating and reheating with potassium nitrate.

Officinal Preparations, U. S.

Bismuthi Subcarbonas. Dose, gr. xv–xlv.

Bismuthi Subnitras. Dose, gr. v–xxx.

Action and Uses.—To raw or mucous surfaces it is astringent and sedative; internally, sedative, astringent.

In apthæ, indigestion, mercurial stomatitis, tendency to diarrhea after eating, it is found of great benefit.

In summer diarrhea of children it is used.

It should be given before meals when employed in stomach disorders. Milk is a very good vehicle for its administration.

BROMINUM.—Bromine. Br.

A liquid, non-metallic element, obtained from sea-water and some saline springs. It is a dark-red liquid, having a very disagreeable odor; sparingly soluble in water, more so in alcohol, and even more so in ether.

Dose, gtt. ij–iij, largely diluted in water.

Officinal Preparations, U. S.

Ammonii Bromidum. Dose, gr. x–xxx.

Potassii Bromidum. Dose, gr. x–xxx.

Action and Uses.—Similar, if not identical, with chlorine. Deodorant, antiseptic, escharotic (undiluted).

In acute coryza, the vapor of it is used: ℞. Brominii, f℥ss; alcoholis, f℥iv. M. S. Inhale often at intervals.

As an escharotic for the removal of chancre, is recommended. Its volatility, fetid odor, and pain after its use as an escharotic, render it objectionable.

BUCHU.—Buchu.

Origin.—Leaves of Barosma Betulina, *Bartling;* B. Crenulata, *Hooker;* and B. Serratifolia, *Willd. Nat. ord.*, Rutaceæ.

Habitat.—Southern Africa.

Constituents.—Volatile oil, resin, mucilage, bitter principle, rutin (?), etc.

Officinal Preparations, U. S.

Extractum Buchu Fluidum. Dose, f℥ss–i.

Infusum Buchu (f℥i to Oi). Dose, f℥i–ij.

Action and Uses.—Stimulant, tonic, diuretic, to some extent diaphoretic.

Useful in chronic inflammations of the genito-urinary tract, it acting electively there.

CALCIUM.—Calcium. Ca.

A brilliant white metal, proved by Davy to be present in its oxide—lime. Calx, or lime (CaO), is the well-known form used in pharmacy, together with the chalks.

Calcii Chloridum—chloride of calcium prepared by fusion, U. S.

Calcii Hypophosphis—hypophosphite of lime. Dose, gr. x–xxx.

Calx—lime recently prepared by calcination. U. S.

Calx Chlorinata—a compound by the action of chlorine on the hydrate of calcium; contains 25 per cent. of chlorine, U. S.

Officinal Preparations, U. S.

Calcis Hydras. Used in pharmacy.

Calcis Carbonas Precipitata. Dose, gr. x–ʒi.

Calcis Phosphas Precipitata. Dose, gr. x–xxx.

Creta Preparata. Dose, gr. x–xv.

Hydrargyrum cum Creta (Hg. 3 parts, chalk 5 parts). Dose, gr. x–xxx.

Trochischi Cretæ.

Mistura Cretæ. Dose, fʒss.

Testa Preparata. Dose, gr. x–xv.

Liquor Calcii Chloridi. Dose, fʒss–i.

Liquor Calcis (lime-water). Dose, fʒi–iv.

Linimentum Calcis (lime-water, f℥vij; linseed oil, f℥vij).

Potassa cum Calce. Caustic; used in pharmacy.

Antagonists and Incompatibles.—Acids, acidulous salts and metallic salts.

In cases of poisoning, vegetable acids—vinegar, lemon-juice, etc.—with demulcents and fixed oils, given freely.

Synergists.—Alkalies, all agents promoting waste, iodides, etc.

Action and Uses.—Antacid, disinfectant (chlorinate of lime).

Excipient in pharmacy. Enters into antacid mixtures very extensively.

CALUMBA.—Columbo.

Origin.—Root of Jateorrhiza Calumba, *Miers. Nat. ord.*, Menispermaceæ.

Habitat.—Eastern Africa, cultivated in some East Indian Islands.

Constituents.—Columbin (white, crystalline, slightly soluble in water), berberina (yellow, crystalline), calumbic acid (colorless, nearly insoluble in cold water), starch, mucilage.

Officinal Preparations, U. S.

Extractum Calumbæ Fluidum. Dose, m.xv–xxx.

Infusum Calumbæ (root, ℥ij to Oi). Dose, f℥ss–ij.

Tinctura Calumbæ (root, ℥ij to Oi). Dose, f℥i–ij.

Antagonists and Incompatibles.—Those agents which promote destructive metamorphosis.

Synergists.—Iron, mineral acids, pepsin, bismuth, etc., and, under some circumstances, the alkalies.

Actions and Uses.—Tonic; simple bitter.

Having no tannin, it may be combined with iron.

CAMPHORA.—Camphor.

Origin.—Cinnamomum (Laurus, *Lin.*) Camphora, *F. Nees et Ebermaier;* Camphora officinarum, *C. G. Nees. Nat. ord.*, Lauraceæ.

Habitat.—China and Japan.

Constituents.—$C_{10}H_{16}O$. Heated with zinc chloride, it yields cymol ($C_{10}H_4$); with nitric acid, $C_9H_{12}O_5$.

Oleum Camphoræ (Camphor oil). Dose, gtt. ij–iij.

Officinal Preparations, U. S.

Aqua Camphoræ (ʒi to Oi). Dose, fʒss–ij.

Linimentum Camphoræ (camph., 1 part; olive-oil, 6 parts).

Linimentum Saponis.

Mistura Chloroformi (chlorof., fʒss; camph., ʒi in fʒvi).

Spiritus Camphoræ (ʒij to Oi). Dose, fʒss–i.

Tinctura Opii Camphorata (paregoric). Dose, fʒi–iv.

Ceratum Plumbi Subacetatis (Goulard's Cerate).

Antagonists and Incompatibles.—Water precipitates it from its spirit solutions; alkaline and earthy salts —sulphate of magnesium—from its aqueous solutions. Coffee, cold, arterial sedatives, depressing agents generally.

Synergists.—Cerebral excitants; opium, alcohol, narcotics.

Actions and Uses.—Stimulant, antispasmodic, sedative, rubifacient, resolvent. Enters into most dentifrices.

Though contraïndicated in gastro-enteritis, it is advised in diarrheas, flatulence (hysterical), and even the preliminary diarrhea of cholera. It is in these cases usually combined with opium.

In nervousness, delirium tremens, maniacal excitement, melancholia, of doubtful benefit.

A popular antaphrodisiac (Ricord's formula): ℞. Camphoræ, lactucarii, āā ʒi. M. ft. pil. No. xxx. Sig. One, two, or more if necessary.

A popular local application for almost every thing.

Camphorated oil is a mild and efficient counter-irritant.

CANELLA.—Canella.

Origin.—Bark of Canella Alba, *Murray*. *Nat. ord.*, Canellaceæ.

Habitat.—West Indies.

Constituents.—Volatile oil, 1 per cent. (contains eugenic acid); resin, bitter principle, mannite, mucilage, starch, albumen.

Officinal Preparations, U. S.

Pulvis Aloes et Canellæ. Dose, gr. x–xx.

Vinum Rhei (rhubarb, ʒij; canellæ, ʒi to Oi). Dose, fʒi–iv.

Action and Uses.—Tonic, stimulant.

Having no tannin, it may be combined with iron or some of its preparations.

Under the title of Hiera Picra, the powdered aloes and canella is given for amenorrhœa.

CANNABIS AMERICANA.—American Hemp.

Origin.—Flowering top of Cannabis Sativa, grown in the United States.

Like in all respects to Cannabis Indica, except less powerful.

Officinal Preparation, U. S.

Extractum Cannabis Americanæ. Dose, gr. ¼ to ½.

CANNABIS INDICA.—Indian Hemp.

Origin.—Cannabis Sativa, *Lin.* *Nat. ord.*, Urticaceæ, Cannabineæ.

Habitat.—Asia, collected in India

Constituents.—Little volatile oil, brown amorphous resin.

Officinal Preparations, U. S.

Extractum Cannabis Indicæ. Dose, gr. ss.

Tinctura Cannabis (gr. iij to f℥i). Dose, gtt. x–xx.

Action and Uses.—Anodyne, nervine, sudorific.

Like opium, it produces sleep after a preliminary stage of excitement, which lasts longer than that of opium. The difficulty of obtaining a reliable preparation precludes any definite rules for its exhibition therapeutically.

Neuralgias and migraine are thought to be benefited by its cautious exhibition.

CANTHARIS.—Cantharides.

Origin.—Cantharis Vesicatoria, *De Geer;* Lytta Vesicatoria, *Fabricius;* Meloe Vesicatorius, *Lin.* *Class*, insecta; *order*, beetles.

Habitat. — Southern and Central Europe, and Western Asia.

Constituents.—According to Robiquet's analysis: Cantharidin, free acetic and uric acids, fatty matters, yellow viscid matter soluble in water and alcohol, yellow substance soluble in ether and alcohol, black extractive, magnesium and calcium phosphates.

Officinal Preparations, U. S.

Tinctura Cantharidis. Dose, m.ij–iv.
Ceratum Cantharidis (for spreading blisters).
Ceratum Extracti Cantharidis.
Charta Cantharidis (blistering papers).
Collodium cum Cantharide.
Linimentum Cantharidis.
Emplastrum Picis cum Cantharide.
Unguentum Cantharidis (ʒij in the ʒi).

Antagonists and Incompatibles.—There is no chemical or physiological antidote—toxic symptoms to be met generally.

Synergists.—Acids and fats increase its solubility and favor its absorption.

Action and Uses.—Vesicant, principally; but in chronically inflamed conditions of the genito-urinary apparatus, where it acts electively, it has been thought to prove useful.

Too violent to be used as a diuretic, producing strangury and bloody urine.

CAPSICUM.—Capsicum. Cayenne.

Origin.—Fruit of Capsicum Fastigiatum, *Blume. Nat. ord.*, Solanaceæ.

Habitat.—Probably tropical America; cultivated.

Constituents.—Capsaicin, fixed oil, waxy matter, resin, coloring matter, trace of volatile oil with odor of Conium.

Officinal Preparations, U. S.

Infusum Capsici. Dose, f℥ss.

Oleo-resina Capsici. Dose, gtt. i.

Tinctura Capsici. Dose, f℥i–ij.

Action and Uses.—Stimulant, stomachic, powerful rubifacient.

Used in atonic dyspepsia, dyspepsia of chronic alcoholism, flatulent colic in hysterical subjects, delirium tremens.

It is contraïndicated in all acute affections of the genito-urinary apparatus; in chronic inflammatory conditions it is advised.

In functional impotence and spermatorrhœa excellent results are obtained, the oleo-resin being the best form: ℞. Oleo-resinæ capsici, f℈i; ergotin (aq. ext.), ℈ij. M. ft. pil. No. xx. Sig. One three times a day.

The plaster is an excellent counter-irritant. The infusion is a good gargle in tonsillitis.

CARBO.—Carbon.

Carbo Animalis, Charcoal from Bone, U. S.

Used in preparing cinchona sulph., morphia and quinia sulphas, and santoninum.

Carbo Ligni, Charcoal from Wood, U. S.

Used in preparing acidum sulphurosum and potassi iodidum.

Officinal Preparations, U. S.

Carbo Animalis Purificatus.

Used in making acidum gallicum, digitalinum, strychnia, and veratria.

Action and Uses.—Antiseptic, deodorizer, decolorizer.

Used in dyspepsia, flatulence, but its unsightliness renders it objectionable.

CARDAMOMUM.—Cardamom.

Origin.—Fruit of Elettaria (Alpinia, *Roxb.;* Amomum, *White*) Cardamomum, *Maton.* *Nat. ord.*, Zingiberaceæ.

Habitat.—Malabar; cultivated in other parts of India.

Constituents.—Volatile oil, 4 to 5 per cent.; fixed oil, 10 to 11 per cent.; starch, albuminoids, mucilage; ash, 15 per cent., containing 0.8 per cent of manganese.

Officinal Preparations, U. S.

Extractum Colocynthidis Compositum. Dose, gr. v–xxx.

Pulvis Aromaticus. Dose, gr. x–xxx.

Tinctura Cardamomi. Dose, f℥i–ij.

Tinctura Cardamomi Composita. Dose, f℥i–iv.

Tinctura Gentianæ Composita. Dose, f℥i–ij.

Tinctura Rhei. Dose, f℥i–iv.

Vinum Aloes. Dose, f℥i–℥i.

Action and Uses.—Stimulant, carminative, stomachic, flavoring adjunct.

CARYOPHYLLUS.—Cloves.

Origin.—Buds of Eugenia Caryophyllata, *Thunberg;* Caryophyllus Aromaticus, *Lin. Nat. ord.*, Myrtaceæ.

Habitat.—Molucca Islands; cultivated in tropical countries.

Constituents.—Volatile oil, 18 per cent.; tannin, 13 per cent.; gum, 13 per cent.; resin, 6 per cent.; wax, caryophyllin, eugenin.

Officinal Preparations, U. S.

Infusum Caryophylli (ʒij–Oi). Dose, fʒij.

Oleum Caryophylli. Dose, gtt. ij–vi.

Spiritus Lavandulæ Compositus. Dose, fʒi–ij.

Syrupus Rhei Aromaticus (for infants). Dose, fʒi.

Vinum Opii. Dose, gtt. xv–xxx.

Action and Uses.—Stimulant, stomachic, antiemetic, possibly antispasmodic.

Good adjunct in flatulence, colic, hysteria.

CASCARILLA.—Cascarilla.

Origin.—Bark of Croton Eluteria, *Bennett. Nat. ord.*, Euphorbiaceæ.

Habitat. Bahama Islands.

Constituents.—Volatile oil, 15 per cent.; cascarillin; resin, 15 per cent.; little tannin, pectin, gum, starch.

Officinal Preparation, U. S.

Infusum Cascarillæ. Dose, fʒij.

Action and Uses.—Stimulant, tonic, febrifuge, in large doses a nauseant.

CATECHU.—Catechu.

Origin.—The heart-wood of Acacia Catechu, *Willd.*, and A. Suma, *Kurz. Nat. ord.*, Leguminosæ, Mimosæ.

Habitat.—India; the second species also in Eastern Africa.

Constituents.—Catechutannic acid, 50 per cent.; quercetin, catechin, catechu red; ash, 0.6 per cent.

Officinal Preparations, U. S.

Infusum Catechu Compositum. Dose, f℥i–iij.

Tinctura Catechu. Dose, f℥i–iij.

Antagonists and Incompatibles.—Mineral acids; salts of lead, silver, and antimony; persalts of iron, alkalies, chemically; vegetable alkaloids, and gelatine, therapeutically.

Synergists.—Tonics, bitters, agents increasing waste.

Action and Uses.—Tonic, astringent.

Much used in relaxed conditions of mucous membranes; especially used in diarrhea.

CERUM.—Wax.

Cera Alba. Yellow wax, bleached. U. S.

Cera Flava. A peculiar concrete substance prepared by Apis mellifica. U. S.

Wax is a good excipient, and is made the basis of

cerates. It enters also into pills, ointments, plasters, and suppositories. It also affords the mechanical dentist a substance with which to take impressions, though latterly it has almost been supplanted by plaster Paris.

Wax is an ancient remedy for dysentery.

CERIUM.—Cerium.

A metal discovered in 1803, by three chemists simultaneously, of which only the oxalate is used in pharmacy.

Cerii Oxalas. Dose, gr. i–iij.

Action and Uses.—Sedative, in vomiting of pregnancy.

It is given in powder, pill, or suspended in mucilage. It cannot be relied on, because of its frequent combination with salts of lauthanum, didymium, or other minerals.

CETRARIA.—Iceland Moss.

Origin.—Cetraria Islandica, *Acharius*. *Nat. ord.*, Lichenes.

Habitat.—Northern hemisphere.

Constituents.—Lichenin; cetraric acid, 2 per cent. (crystalline, bitter); lichen-stearic acid, 1 per cent.; fumaric acid, oxalic acid, sugar; cellulose, 16 per cent.; ash, 1 to 2 per cent.

Officinal Preparation, U. S.

Decoctum Cetrariæ. Dose, f℥ss–iv.

Action and Uses.—Demulcent, tonic, nutritive.

CHENOPODIUM.—Worm-seed.

Origin.—Fruit of Chenopodium Ambrosioides, *Lin.;* Var. Anthelminticum, *Gray.* *Nat. ord.*, Chenopodiaceæ.

Habitat.—West Indies and Central America; naturalized in the United States.

Constituents.—Volatile oil, sp. gr. 0.91; consists of $C_{10}H_{16}$ and $C_{10}H_{16}O$.

Dose, in substance, gr. xx–xl.

Officinal Preparation, U. S.

Oleum Chenopodii. Dose (for child), gtt. v–x.

Action and Uses.—Anthelmintic.

A popular remedy for lumbricoides, given night and morning for two or three days, then followed by a brisk cathartic.

CHIMAPHILA.—Pipsissewa.

Origin.—Leaves of Chimaphila Umbellata, *Nuttall.* *Nat. ord.*, Ericaceæ.

Habitat.—Northern continents.

Constituents.—Arbutin, ericolin, urson, tannin, chimaphillin (yellow, tasteless, volatile prisms), sugar, gum, etc.

Officinal Preparations, U. S.

Decoctum Chimaphilæ. Dose, f℥ij–iv.

Extractum Chimaphilæ Fluidum. Dose, m.xx–xl.

Actions and Uses.—Astringent, tonic, alterative, diuretic, nephritic.

Winter-green is an Indian remedy for scrofula,

rheumatism, and nephritic affections; also, a diuretic in dropsy.

CHLORAL.—Chloral (Hydrate).

Chloral ($C_2HCl_3O.H_2O$) was discovered by Leibig in 1832; soon after, he and Dumas determined its production and composition. It was introduced as a therapeutic agent by Dr. Leibreich, of Berlin, a few years ago.

It is formed by dry chlorine being passed into absolute alcohol; and by continuing this, three atoms of hydrogen are abstracted from the resulting aldehyd, with the formation of hydrochloric acid, and are replaced by three atoms of chlorine, producing chloral. It is subsequently purified and hydrated.

Chloral hydrate occurs in white, crystalline masses, soluble in four parts of chloroform, and in less than its own weight of water, alcohol, and ether. In water or glycerine, it dissolves morphia, veratria, and other alkaloids.

Antagonists and Incompatibles.—The depression of heart and respiration caused by chloral is met by alcoholic stimulants, ammonia, atropia, galvanism, and artificial heat.

Leibreich held strychnia, used hypodermically, to be antagonistic.

Synergists.—The hypnotics, notably opium and anæsthetics, especially when given simultaneously.

Action and Uses.—Locally, antiseptic, and, by some authorities, sedative; generally, hypnotic, sedative.

Leibreich thought, from the action of an alkali

upon chloral, that the soda of the blood would split it up into chloroform and formic acid. The following objections to this theory seem to invalidate it:

1. The effects of chloral differ from those produced by a corresponding quantity of chloroform.

2. After its administration, there is no elimination of chloroform by breath or urine.

3. It is more decidedly hypnotic, and much less anæsthetic, than chloroform.

4. Its crystals have been recognized in the blood, and the products of its decomposition recovered from the urine.

The "chloral habit" must be guarded against in all cases where its use is to be prolonged.

Valuable in seasickness, in from fifteen to thirty grain doses, every four hours.

Effective in cholera, especially when combined with morphia. ℞. Chloral hydrat., ʒiij; morph. sulph., gr. iv; aq. laur.-cerasi, fʒi. M. Sig. From 15 to 20 minims in water every three or four hours.

As a pure hypnotic is unequaled in sleeplessness, delirium tremens, acute mania, etc.

Chloral and camphor, rubbed together, produce an oily fluid that is a good local anæsthetic.

CROTON CHLORAL.—Croton Chloral.

A substance obtained by passing a stream of chlorine through acetic aldehyd for twenty-four hours, separating and purifying the oleaginous fluid (butyl-chloral, or croton-chloral) which is formed, and converting it into hydrate.

It was first obtained by Kramer and Pinner, in 1870, when they thought it was croton-chloral, but subsequently decided it to be trichlor-butylaldehyd, which is butylaldehyd with 3H replaced with 3Cl. The hydrate contains a little over 9 per cent. of water.

It occurs in small, brilliant tabular crystals, soluble, but not freely so, in water; and, as respects antagonists and incompatibles, may be classed with chloral hydrate.

Dose, gr. ij–xv, largely diluted in water.

Action and Uses.—Is feebler and less certain, though resembling chloral hydrate. According to Leibreich, it has special action on the sensory divisions of the fifth nerve; hence, used in facial neuralgias with success. It may be substituted for the hydrate when heart involvements are present. A combination of the two acts happily as a hypnotic, better than either alone. On account of its bitter taste, it is well to mask it in glycerine or syrup flavored with peppermint; or, still better, the syrup of licorice-root. The following mixture may be used: Butyl-chloral hydrate, 5 to 10 parts; glycerine, 20 parts; distilled water, 130 parts; to be well shaken.

CHLORINUM.—Chlorine. Cl.

An elemental gas, powerfully decolorizing, irritating, and suffocating; also disinfecting, for which it is most used.

Aqua Chlorinii, U. S. Dose, f℥i–iv.

CHLOROFORMUM.—Chloroform. $CHCl_3$.

Chloroform was discovered by Soubeiran in 1832; analyzed by Dumas, 1834; used as an anæsthetic in 1847, at the suggestion of Turnell, by Lawrence and Holmes Coate in London. It was introduced for this purpose in obstetric practice by the late Sir J. Simpson.

Formerly procured by the action of caustic alkalies on chloral, but prepared now by the distillation of diluted alcohol with chlorinated lime.

CHLOROFORMUM VENALE.—Commercial Chloroform.

A colorless liquid, varying sp. gr. from 1.45 to 1.49. Shaken with an equal volume of officinal sulphuric acid in a bottle closed with glass stopper, it forms a mixture which separates by rest into two layers, the upper one colorless, and the lower one (the acid) of a brownish hue, which after twenty-four hours becomes darker, but never quite black.

CHLOROFORMUM PURIFICATUM.—Purified Chloroform.

A colorless volatile liquid, not inflammable, of a bland, ethereal odor, and hot, aromatic, saccharine taste. Sp. gr. 1.48. Slightly soluble in water, freely so in alcohol and ether. In the experiment above no color is imparted to either. It dissolves gutta-percha, caoutchouc, etc.

Officinal Preparations, U. S.

Mistura Chloroformi (f℥ss to f℥vi). Dose, f℥ss.

Spiritus Chloroformi (f℥i to f℥xii, U. S.; f℥i to f℥xx, Br.). Dose, f℥ss–i.

Linimentum Chloroformi ($\frac{3}{7}$ chloroform, $\frac{4}{7}$ olive-oil).

Liquor Gutta-perchæ. And in preparing Atropia.

Antagonists and Incompatibles.—It separates when prescribed with weak spirits or glycerine. It is soluble in alcohol (ten to six), in ether (one to seven), in water (one to two hundred). Dissolves freely with olive-oil and turpentine, but does not mix with glycerine. It dissolves caoutchouc, gutta-percha, mastic, tolu, benzoin, copal, among the gums; iodine, bromine, the organic alkaloids; fixed and volatile oils, resins, and fats.

There is no chemical antidote; artificial respiration, cold affusion, and galvanism may be employed.

Synergists.—Anæsthetics, opium, chloral, alcohol, etc.

Action and Uses.—Counter-irritant, anæsthetic, stimulant, sedative, antispasmodic. (See Anæsthesia.)

Flatulent colic: ℞. Chloroformi, tinc. cardamom. comp., āā f℥ij. M. S. Teaspoonful every hour, in water.

Irritable ulcer of rectum and itching about the anal region: ℞. Ung. zinci oxid., ℥i; chloroform, f℥i. M. ft. unguentum.

Neuralgia, by Bartholow's deep injection: Inject deeply in the region of the affected part five to fifteen minims of pure chloroform. The consequent pain and swelling slowly disappear. Chronic cases

are successfully treated thus, especially tic-douloureux, but of any nerves.

Ointment for pruritus: ℞. Chloroformi, m.vi; cucumber cerat., ʒi. M. S. Apply. Or: ℞. Plumbi carbonat., ʒss; chloroformi, m.iv; ung. rosæ aq., fʒi. M. S. Apply. Also: Take of acetate of morphia one part, of chloroform eight parts, lard sixty parts, and oil of sweet almonds forty parts. Mix, and apply several times a day.

CIMICIFUGA.—Black Snakeroot.

Origin.—Root of Cimicifuga Racemosa, *Elliott. Nat. ord.*, Ranunculaceæ.

Habitat.—North America, in rich woodlands.

Constituents.—Crystalline principle not precipitated by lead acetate; soluble in chloroform and alcohol, the solution intensely acrid; resin, tannin, starch, gum.

Officinal Preparations, U. S.

Extractum Cimicifugæ Fluidum. Dose, fʒss–i.

Antagonists and Incompatibles.—As its preparations contain tannin and gallic acids, they are incompatible with iron. Stimulants, as alcohol, ammonia, antagonize therapeutically.

Synergists.—Its action lies between digitalis and ergot; hence it is assisted by cold, digitalis, ergot, belladonna, etc.

Action and Uses.—Alterative, emmenagogue, sedative, antispasmodic, and in large doses emetic.

Decoction, not officinal, has been used considerably with benefit in chorea in children.

CINCHONA.—Cinchona.

Syn. Peruvian, Cinchona Barks.

Origin.—(1) Bark of the trunk of Cinchona Calisaya, *Weddell;* (2) bark of the branches of C. Officinalis, *Hooker;* (3) bark of the trunk of C. Succirubra, *Pavon. Nat. ord.*, Rubiaceæ, Cinchoneæ.

Habitat.—1. North-eastern Bolivia and South-eastern Peru; altitude, 5,000 to 6,000 feet. 2. Ecuador, chiefly in the neighborhood of Loxa. 3. Ecuador, west of Chimborazo; altitude, 2,500 to 5,000 feet.

Constituents.—Kinic (quinic) acid, kinovic (quinovic) acid, kinovin (quinovin), cinchotannic acid, cinchona red, volatile oil, gum, sugar, wax; ash, 2 to 3 per cent.

The most important constituents are these five alkaloids: quinia and quinidia (conquinamina), cinchonia and cinchonidia, and quinamina.

Cinchona Flava. The yellow (Calisaya) bark of Cinchona. U. S.

Cinchona Pallida. The pale bark of Cinchona. U. S.

Cinchona Rubra. The red (succirubra) bark of Cinchona. U. S.

Officinal Preparations, U. S.

Cinchoniæ Sulphas. Dose, gr. ij–xxx.

Decoctum Cinchonæ Flavæ. Dose, f℥ij–iv.

Extractum Cinchonæ. Dose, gr. v–xv.

Extractum Cinchonæ Fluidum. Dose, gtt. ij–xv.

Infusum Cinchonæ Flavæ. Dose, f℥ij.

Quiniæ Sulphas. Dose, gr. i–xx.

Pilulæ Quiniæ Sulphatis (each, gr. i).

Tinctura Cinchonæ. Dose, f℥i–ij.

Of the red bark:

Decoctum Cinchonæ Rubræ. Dose, f℥ij–iv.

Infusum Cinchonæ Rubræ. Dose, f℥ij.

Tinctura Cinchonæ Composita. Dose, f℥i–ij.

Antagonists and Incompatibles.—Substances containing free tannic acid should not be administered with the infusion or decoction. Preparations of iodine (tincture or comp. tincture) form insoluble compounds. The alkalies, alkaline carbonates, and alkaline earths, precipitate the alkaloids.

Therapeutically, by mercury, the iodides, and salts of copper, zinc, and lead.

Gubler has shown that morphia and quinia are antagonists, with respect to their effect on the brain. In their effect on the sympathetic system, the heart, and the temperature, quinia and belladonna and its alkaloids are antagonistic.

Synergists.—Agents which promote constructive metamorphosis, bitters, irons, arsenic, and the acids.

Action and Uses.—Astringent, tonic, antiperiodic, antiseptic, febrifuge, bitter.

The specific in the treatment of malarial affections. Except for bitters, the alkaloids have supplanted the bark.

Quinia combines with its synergists to make tonics, efficient and popular.

CINNAMOMUM.—Cinnamon.

Origin.—Bark of Cinnamomum Zeylanicum, *Nees. Nat. ord.*, Lauraceæ.

Habitat.—Ceylon; cultivated.

Constituents.—Volatile oil, etc.

Oleum Cinnamomi. Dose, gtt. i–ij.

Officinal Preparations, U. S.

Tinctura Cinnamomi (℥iss to Oi). Dose, f℥i–ij.

Aqua Cinnamomi. As a vehicle.

Pulvis Aromaticus (cinnamon, ginger, each 2 parts; cardamom and nutmeg, each 1 part). Dose, gr. x–xx.

Confectio Aromatica (pulv. aromat. and honey).

Spiritus Cinnamomi (oil, ℥i to Oi). Dose, f℥i–ij.

Action and Uses.—Mild astringent, aromatic. Used in flavoring.

COLCHICUM.—Colchicum.

Origin.—Root and seed of Colchicum autumnale, *Lin. Nat. ord.*, Melanthaceæ.

Habitat.—Southern and Central Europe.

Constituents.—Root: starch, gum, resin, sugar, fat, colchicia. Leaves: fixed oils, 6 to 8 per cent.; gum, sugar, colchicin and its derivatives.

Colchici Radix. The corm of Colchicum autumnale. U. S.

Colchici Semen. The seed of Colchicum autumnale. U. S.

Officinal Preparations, U. S.

Extractum Colchici Actum (of the root). Dose, gr. i–ij.

Extractum Colchici Radicis Fluidum. Dose, m.ij–iv.

Vinum Colchici Radicis (f℥vi to Oi). Dose, gtt. x–xv; purg., m.xxx.

Extractum Colchici Seminis Fluidum. Dose, m.ij–vi.

Tinctura Colchici (seeds, ℥ij to Oi). Dose, f℥ss–i.

Vinum Colchici Seminis (seeds, ℥ij to Oi). Dose, f℥ss–iss.

Antagonists and Incompatibles.—Tannic acid by combination retards, but does not prevent, absorption.

In poisoning, emetics, purgatives, and demulcents, followed by opium and alcohols to meet heart depression.

Synergists.—Alkaloids that are gastro-intestinal irritants and heart depressants—veratria, aconitia, etc.; therapeutically, emetics, purgatives, and alkalies.

Action and Uses.—Cathartic, emetic, sedative.

Used also in gout and rheumatism.

COLOCYNTHIS.—Colocynth.

Origin.—Fruit, deprived of its rind, of Citrullus Colocynthis, *Schrader;* Cucumis Colocynthis, *Lin. Nat. ord.*, Cucurbitaceæ.

Habitat.—Southern and Western Asia, and Northern Africa.

Constituents.—Colocynthin, resin, colocynthitin (tasteless, crystalline resin), pectin, gum; ash, 11 per cent.

Officinal Preparations, U. S.

Extractum Colocynthidis (alcoholic). In combination only.

Extractum Colocynthidis Compositum. Dose, gr. v–xxx.

Pilulæ Catharticæ Compositæ. Dose, 1 to 3 pills.

Action and Uses.—Drastic purgative, in large doses, emetic and irritant.

Never used alone, but in combination with other purgatives; as a derivative purgative is best.

CONIUM.—Hemlock.

Origin.—Leaves and green-dried fruit of Conium Maculatum, *Lin.* *Nat. ord.*, Umbelliferæ, Campylospermæ.

Habitat.—Asia and Europe; naturalized in North America.

Constituents.—Leaves: Conia (minute quantity), volatile oil (not poisonous), albumen, mucilage; ash, 12 per cent. Fruit: Conia, $\frac{1}{5}$ to $\frac{1}{2}$ per cent.; methylconia, conhydrina, little volatile oil, fixed oil.

Conii Folia. The leaves of Conium Maculatum. U. S.

Conii Fructus. The full-grown fruit of Conium Maculatum, gathered while green and carefully dried. U. S.

Officinal Preparations, U. S.

Extractum Conii Fructus Fluidum. Dose, m.i–v.

Extractum Conii (of the leaves). Dose, gr. i–ij.

Extractum Conii Alcoholicum (leaves). Dose, gr. i–ij.

Succus Conii. Dose, f℥ss–i.

Tinctura Conii (℥ij to Oi). Dose, f℥ss–i.

Antagonists and Incompatibles.—The caustic alka-

lies, tannic acid, chemically; nux vomica, its alkaloids strychnia and brucia, picrotoxine and the tetanizing agents in general, physiologically.

Synergists.—Gelsemium, tobacco, veratrum viride, aconite, methylstrychnia, hydrocyanic acid, and opium.

Action and Uses.—Sedative, narcotic.

It acts upon the nervous system electively, and is found useful in most, if not all, nervous affections.

COPAIBA.—Copaiba.

Origin.—Oleo-resin of (1) Copaifera Langsdorffii, *Desf.;* (2) Cop. Officinalis, *Lin.*, and other species of Copaifera. *Nat. ord.*, Leguminosæ, Cæsalpineæ.

Habitat.—1. Brazil; 2. Venezuela and New Granada.

Constituents.—Volatile oil, bitter principle (soluble in water), resins, bitterish and mostly amorphous; copaivic, oxy-copaivic, and meta-copaivic acids are crystalline.

Officinal Preparations, U. S.

Oleum Copaibæ. Dose, m.iij–xv.

Pilulæ Copaibæ (each, gr. ivss). Dose, 3 to 5 pills.

Antagonists and Incompatibles.—Agents increasing waste and vaso-motor depressants.

Synergists.—Oils of cubeb and sandal-wood, stimulants.

Action and Uses.—Stimulant, expectorant, diuretic, diaphoretic, laxative, and nauseant.

In gonorrhea, after the subsidence of the acuter symptoms, we find its most useful field. A good formula: ℞. Ol. copaibæ, ol. cubebæ, et ol. sant. flav., āā f℥i.; magnesiæ, ℥ij. M. ft. pil. No. lx. S. 2 pills every 4 hours.

The nauseous taste and irritation that follow its use render it objectionable. Another objection is that it causes a roseola, or urticaria, to break out, occasionally, in subjects with tender skins.

COPTIS.—Gold-thread.

Origin.—Coptis Trifolia, *Salisbury*. *Nat. ord.*, Ranunculaceæ.

Habitat.—Northern continents.

Constituents.—Berberina, coptina (white alkaloid), resin, sugar, etc.; ash, 4 to 5 per cent.; no tannin.

Antagonists and Incompatibles.—Nitrate of silver and acetate of lead. Agents promoting waste or destructive metamorphosis, in general.

Synergists.—Iron, mineral acids, pepsin, bismuth, etc., and under some circumstances the alkalies.

Action and Uses.—Tonic (indigenous), bitter, resembling quassia.

May be given in substance (gr. x–xxx), infusion (℥i to Oi; dose, f℥i–ij), and tincture (℥i to Oi; dose, f℥i–ij).

CORIANDER.—Coriander.

Origin.—Fruit of Coriandrum Sativum, *Lin.* *Nat. ord*, Umbelliferæ, Cœlospermæ.

Habitat.—Central Asia and Southern Europe; cultivated.

Constituents.—Volatile oil, ½ to 1 per cent.; fat, 13 per cent.; mucilage, etc.

Action and Uses.—Carminative, stimulant, stomachic.

Dose, ℈i–ʒi; rarely used, except in combination.

CORNUS FLORIDA.—Dogwood.

Origin.—Bark of Cornus Florida, *Lin.* *Nat. ord.*, Cornaceæ.

Habitat.—North America, in woods.

Constituents.—Cornin; tannin, 3 per cent.; resin, gum, etc.

Officinal Preparations, U. S.

Decoctum Cornus Floridæ. Dose, fʒij.

Extractum Cornus Floridæ Fluidum. Dose, fʒss.

Antagonists and Incompatibles.—Agents promoting waste.

Synergists.—Iron, mineral acid, pepsin, bismuth, and under some circumstances the alkalies.

Actions and Uses.—Astringent, tonic, bitter, febrifuge.

Has been recommended as a substitute for quinia.

CREASOTUM.—Creasote.

Obtained by the destructive distillation of different species of Pinus, is a thick viscid semifluid called tar, in which creasote is found. Sparingly soluble in water, freely so in alcohol and ether.

Officinal Preparations, U. S.

Aqua Creasoti (m. ¾ to f3i). Dose f3i–iv.

Unguentum Creasoti (f3ss to lard 3i).

Action and Uses.—Disinfectant, antiseptic.

It has been superseded almost entirely by carbolic acid. Its antagonists, incompatibles, and synergists may be reckoned as identical with those of that acid.

The ointment is used in scaly eruptions.

CUBEBA.—Cubeb.

Origin.—Unripe fruit of Cubeba Officinalis, *Miquel. Nat. ord.*, Piperaceæ.

Habitat.—Java; cultivated.

Constituents.—Volatile oil, 5 to 15 per cent.; resin, 3 per cent.; cubebic acid, 1 to 3 per cent.; cubebin, fat, wax, etc.

Officinal Preparations, U. S.

Extractum Cubebæ Fluidum. Dose, f3ss–ij.

Oleo-resina Cubebæ (8 times strength of powder). Dose, m. x–xx.

Oleum Cubebæ. Dose, gtt. x–xij.

Tinctura Cubebæ. Dose, f3ss–ij.

Trochischi Cubebæ (each, gtt. i of the oleo-resin.)

Action and Uses.—Stimulant, local irritant, carminative (volatile oil), diuretic (resin and cubebic acid), laxative (medium dose). In chronic inflammations of the mucous surfaces, it is almost universally used, viz.: nasal catarrh, by insufflation; atonic dyspepsia; catarrh of colon and rectum; catarrh of bladder; and in gonorrhea, in the oleo-resin, or oil.

CUPRUM.—Copper. Cu.

Copper is found in nature as native copper, and in various ores. It is a reddish metal, sp. gr. 8.95, malleable, ductile, and of fair tenacity. Oxidizes in the air, becoming slowly coated with the subcarbonate. Its salts only, especially the sulphate, are used in pharmacy.

Cupri Subacetas (verdigris), Impure Subacetate. U. S.

Cupri Sulphas (blue-stone), Sulphate. U. S. Dose, gr. $\frac{1}{6}$–$\frac{1}{2}$.

Cuprum. Copper wire, or foil. U. S.

Officinal Preparations, U. S.

Cuprum Ammoniatum. Dose, gr. $\frac{1}{6}$–$\frac{1}{2}$.

Copper is used in preparing Spts. Ætheris Nitrosi.

Antagonists and Incompatibles.—Alkalies and their carbonates, lime-water, mineral salts (except sulphates), iodides, and most astringent vegetables.

In poisoning, albumen, milk, freely given, followed by emesis or stomach-pump.

The most effective chemical antidote is ferro-cyanide of potassium, forming the insoluble ferro-cyanide of copper.

Synergists.—Salts of lead, tin, zinc, mercury, silver, gold; as they all promote destructive metamorphosis, and affect the nervous system secondarily.

All unfavorable surroundings favor the action of the salts of copper.

Action and Uses. — Locally, astringent, hæmostatic; generally, astringent, emetic.

Sulphate in small doses at times effective in vomiting of pregnancy. Dose, gr. $\frac{1}{20}$ (twentieth).

Sulphate as emetic (gr. $\frac{1}{2}$ doses) repeated till vomiting is produced. It has been supplanted by zinc salts, which are better.

Acute dysentery: ℞. Cupri sulph., gr. ss; magnesiæ sulph., ʒi; acidi sulph. dil., fʒi; aquæ, fʒiv. M. S. Tablespoonful every four hours.

Chronic diarrhea or dysentery: ℞. Cupri sulph., gr. i; morph. sulph., gr. i; quiniæ sulph., gr. xxiv; M. ft. pil. No. xij. S. One pill three times a day. The copper may be increased as tolerance is established.

DIGITALIS.—Fox-glove.

Origin.—Leaves of Digitalis Purpurea, *Lin.* *Nat. ord.*, Scrophulariaceæ.

Habitat.—Europe, in sandy soil, in edges of woods.

Constituents.—Digitalin, resin, mucilage, extractive, inosite, pectin.

Officinal Preparations, U. S.

Digitalinum (active principle). Dose, gr. $\frac{1}{60}$.
Extractum Digitalis. Dose, gr. $\frac{1}{4}$–$\frac{1}{2}$.
Extractum Digitalis Fluidum. Dose, m. i–ij.
Infusum Digitalis (ʒij to Oi). Dose, fʒij–iv.
Tinctura Digitalis (ʒij to Oi). Dose, m. v–x.

Antagonists and Incompatibles.—Cinchona preparations, acetate of lead, sulphate and tinc. chloride of iron, chemically; opium, aconite, lobelia, and the

cardiac paralyzers partly; tannic acid and tannates more nearly; but saponine (active principle of Saponaria officinalis) entirely, physiologically.

Synergists.—Cold, ergot, belladonna.

Action and Uses.—Diuretic, sedative, narcotic. Especially efficacious as a diuretic in dropsies resulting from heart involvements.

Its action is generally explained upon the hypothesis of increased blood-pressure, though Brunton says it is due to special action on the Malpighian tufts.

In almost all cases of excited circulation the stimulating and tonic effect of digitalis acts most happily to regulate, and finally to relieve.

ELATERIUM.—Elaterium.

Origin.—Resin from the fruit of Ecbalium (Momordica, *Lin.*) Elaterium, *Richard. Nat. ord.*, Cucurbitaceæ.

Habitat.—Western Asia and Southern Europe; cultivated.

Constituents.—Elaterin, 27 to 33 per cent.; chlorophyll; ash, 8 to 10 per cent.; perhaps, also, prophetin, ecballin, hydro-elaterin, and elaterid.

Elaterium. Dose, gr. $\frac{1}{4}$ (of Clutterbuck's, dose, gr. $\frac{1}{8}$).

Elaterin (not officinal). Dose, gr. $\frac{1}{16}$–$\frac{1}{12}$.

Action and Uses.—Hydragogue cathartic.

Used in ascites, or anasarca—general dropsy—to carry off fluid. The after exhausting effects have to be met with stimulants.

ERGOTA.—Ergot.

Origin.—Claviceps Purpurea, *Tulasne.* *Nat. ord.*, Fungi.

Habitat.—In the inflorescence of Secale cereale, *Lin.*, and of other grasses.

Constituents.—Fixed oil, 30 per cent.; mycose, proteids; sclerotic acid, 4 per cent.; scleromucin, 2 to 3 per cent.; sclererythrin, $\frac{1}{100}$ per cent.; scleroiodin, picrosclerotin, sclerocrystallin, and scleroxanthin, ecbolina and ergotina, ergotinia.

Officinal Preparations, U. S.

Extractum Ergotæ Fluidum. Dose, m.x–f3i.

Vinum Ergotæ (f℥ij fld. ext. in Oi). Dose, f3ss–ij.

Antagonists and Incompatibles.—Caustic alkalies, metallic salts, chemically; aconite, veratrum viride, tobacco, lobelia, etc., physiologically.

Synergists.—Electricity, cold, digitalis, belladonna, physiologically; savin, gossypuim, rue, borax, therapeutically.

Action and Uses.—Emmenagogue, ecbolic, parturient, hæmostatic, poisonous.

Of late years, it is the hæmostatic for oozing hemorrhage, as from the lungs, uterus, etc.

ERIGERON.—Flea-bane.

Origin.—Leaves and top of Erigeron Philadelphicum, *Lin.;* Erigeron Annuum, *Persoon;* and Erigeron Strigosum, *Muhlenberg.* *Nat. ord.*, Compositæ.

Habitat.—North America, in fields and pastures.

Officinal Preparations, U. S.

Extractum Erigerontis Canadensis Fluidum. Dose, f℥ss–i.

Oleum Erigerontis Canadensis. Dose, gtt. v.

Action and Uses.—Diuretic, diaphoretic, tonic, astringent.

EUPATORIUM.—Thoroughwort. Boneset.

Origin.—Tops and leaves of Eupatorium Perfoliatum, *Lin.* *Nat. ord.*, Compositæ.

Habitat.—North America, in low grounds.

Constituents.—Eupatorin (bitter glucoside), volatile oil, tannin, gum, sugar, etc.

Officinal Preparation, U. S.

Infusum Eupatorii. Dose, f℥i–ij.

Action and Uses.—Stimulant, tonic, diaphoretic, emetic, laxative.

Large dose of the infusion (1 pint) to produce vomiting.

FERMENTUM.—Yeast.

Origin.—Torula (Saccharomyces, *Meyen*) Cerevisiæ, *Turpin.* *Nat. ord.*, Fungi.

Habitat.—In fermenting malt liquors.

Action and Uses.—Tonic, stimulating, laxative, antiseptic.

FERRUM.—Iron. Fe.

Iron, found native, is of supposed meteoric origin; extensive combination with oxygen, sulphur, etc.,

found in ore-beds. Its separation from ores is a rich industry in the world. Hard, dark-gray metal, ductile and malleable, exceeds all other metals in tenacity. Its great utility may, from these properties, be inferred. Sp. gr. 7.8.

It exists in the animal and vegetable juices, and is an essential element to the blood.

Officinal Preparations, U. S.

Ferri Chloridum. Dose, gr. v–x.

Liquor Ferri Chloridi. Dose, m.ij–x.

Tinctura Ferri Chloridi. Dose, m.x–xl.

Ferri Citras. Dose, gr. x–xx.

Liquor Ferri Citratis. Dose, m.x–xl.

Ferri et Ammonii Citras. Dose, gr. v–x.

Ferri et Ammonii Sulphas. Dose, gr. ij–xij.

Ferri et Ammonii Tartras. Dose, gr. x–xxx.

Ferri et Potassii Tartras. Dose, gr. x–xxx.

Ferri et Quiniæ Citras. Dose, gr. v–xv.

Ferri et Strychinæ Citras. Dose, gr. iij–v.

Ferri Ferro-cyanidum (Prussian blue). Dose, gr. v.

Ferri Lactas. Dose, gr. ij–x.

Ferri Oxalas. Dose, gr. ij–v.

Ferri Oxidum Hydratum. Dose, gr. v.

(As an antidote, 20 grains to every 1 of arsenious acid taken.)

Ferri Phosphas. Dose, gr. v–x.

Ferri Pyrophosphas. Dose, gr. ij–vi.

Ferri Subcarbonas. Dose, gr. v–xx.

Emplastrum Ferri.

Trochischi Ferri Subcarbonatis.

Ferri Sulphas. Dose, gr. i–x.

Mistura Ferri Composita. Dose, f℥ss.

Ferri Sulphas Exsiccata. Dose, gr. i–ij.

Ferrum Redactum. Dose, gr. i–v.

Pilulæ Ferri Carbonatis (Vallet's Mass). Dose, gr. x–xx.

Pilulæ Ferri Compositæ. Dose, 2 to 6 pills.

Pilulæ Ferri Iodidi (each, gr. i, Iodid. Ferri and gr. ⅓ Ferri Redac.).

Syrupus Ferri Iodidi (grs. vij⅓ to f℥i). Dose, m.xx–xl.

Liquor Ferri Nitratis. Dose, m.x–xx.

Liquor Ferri Subsulphatis (Monsel's Solution). Dose, m.ij–x.

Liquor Ferri Tersulphatis (to prepare hydrated sesquioxide).

Potassii Ferro-cyanidum. Dose, gr. x–xv.

Ferri Bromidum (unofficinal). Dose, gr. x–xx.

Antagonists and Incompatibles. — The carbonate, with acids, acidulous salts, and vegetable astringents; the citrates and tartrates, with mineral acids, alkalies, and their carbonates, tannic acid; the iodides, with acids, acidulous salts, alkalies, and their carbonates, lime-water, vegetable astringents; the tincture of the chloride, with alkalies and their carbonates, lime-water, carbonate of lime, magnesia and its carbonate; and astringent vegetables, that turn it black.

Synergists. — Agents that promote constructive metamorphosis, especially animal aliment, the simple, aromatic and astringent bitters, cinchona, manganese, bismuth, etc.

Action and Uses. — Hæmatic tonic, astringent (hæmostatic and styptic).

Debility from chronic malarial poisoning: ℞. Sulph. strychniæ, gr. i; arsenic. acid., gr. iij; ferri redact., ʒi; sulph. quiniæ, ʒiss. M. ft. pil. No. lx. S. One pill three times a day.

Epilepsy, in anæmic subjects, it is recommended to combine bromide of potassium and iron: ℞. Potassii brom., ʒi; ferri bromid., gr. iv; aq. dest., fʒij; syr. simp., fʒvi. M. S. Tablespoonful three times a day.

In giving iron it is best to administer a brisk cathartic every four or five days.

FILIX MAS.—Male Fern.

Origin. — Rhizome of (1) Aspidium Filix Mas, *Swartz;* and (2) Aspidium Marginale, *Willdenow. Nat. ord.*, Filices.

Habitat.—1. Rocky Mountains, Canada, Northern Europe, and Asia. 2. United States.

Constituents.—Fixed oil, 6 to 7 per cent.; filitannic acid, filix red, chlorophyll, filicic acid—these found in the oleo-resina filicis.

Officinal Preparation, U. S.

Oleo-resina Filicis. Dose, m.v–xv.

Action and Uses.—Tænifuge.

Should be taken fasting, at bed-time, the dose being suspended in milk.

The following formula acts well in concealing it: ℞. Ext. filicis liquid (oleo-resina filicis), fʒiss; mucil. tragacanth, fʒss; syr. Zingerb., fʒij; aq. dest., ad

f℥iss. M. S. Taken at bed-hour, after a fast of several hours.

FŒNICULUM.—Fennel.

Origin.—Fruit of Fœniculum Vulgare, *Gartner. Nat ord.*, Umbelliferæ, Orthospermæ.

Habitat.—Levant and Southern Europe; cultivated.

Constituents.—Volatile oil, 2 to 4 per cent.; fixed oil, 12 per cent.; sugar, mucilage.

Officinal Preparations, U. S.

Oleum Fœniculi. Dose, m.v–xv.

Tinctura Rhei et Sennæ. Dose, f℥ss–ij.

Aqua Fœniculi (oil, m.xv to Oi).

Action and Uses.—Carminative, stimulant, stomachic, galactogogue.

In flatulent colic of infants infusion is much used.

GALBANUM.—Galbanum.

Origin.—Gum-resin from Ferula Galbaniflua, *Boissier et Buhse*, and other species of Ferula. *Nat. ord.*, Umbelliferæ, Orthospermæ.

Habitat.—Persia.

Constituents.—Volatile oil, 6 to 9 per cent.; resin, 60 to 66 per cent.; gum, 15 to 20 per cent.; umbelliferon.

Officinal Preparations, U. S.

Emplastrum Asafœtidæ.

Emplastrum Galbani Compositum (turpentine, Burgundy pitch, lead-plaster).

Pilulæ Galbani Compositæ (each, galban., gr. iss; myrrh, gr. iss; asafœtidæ, gr. ss). Dose, in substance, gr. x–xx.

Action and Uses. Stimulant, expectorant, antispasmodic.

GALLA.—Nut-gall.

Origin.—Excrescences on Quercus Lusitanica, *Webb;* Var. Infectoria, *De Cand.;* Q. Infectoria, *Olivier. Nat. ord.*, Cupuliferæ. Caused by the punctures and deposited ova of Cynips Gallæ Tinctoriæ, *Olivier.*

Habitat.—Levant.

Constituents.—Tannin, 50 to 60 per cent.; gallic acid, 2 to 3 per cent.; mucilage, sugar, resin, starch (in nucleus).

Officinal Preparations, U. S.

Acidum Gallicum (*vide* page 9). Dose, gr. v–xx.
Acidum Tannicum (*vide* page 17). Dose, gr. i–v.
Tinctura Gallæ (ʒij to Oi). Dose, fʒi–iij.
Unguentum Gallæ (1 to 7 of lard).
Unguentum Acidi Tannici (ʒss to ʒi).
Glyceritum Acidi Tannici (ʒij to ʒi).
Glyceritum Acidi Gallici (ʒij to ʒi).
Suppositoria Acidi Tannici (each, gr. v).
Trochischi Acidi Tannici (each, gr. i).

The active principles in galls are tannic and gallic acids, which see for description, etc.

Antagonists and Incompatibles.—Mineral acids, salts of antimony, lead, and silver, persalts of iron, alkalies.

Synergists.—Tonics, bitters, agents that promote waste.

Action and Uses.—Astringent, styptic.

(Its further use is but the exhibition of either tannic or gallic acids, which see.)

GAMBOGIA.—Gamboge.

Origin.—Garcinia Hanburii, *Hooker fil.;* G. Morella, *Desrousseaux;* Var. Pedicellata, *Hanbury. Nat. ord.*, Guttiferæ.

Habitat.—Anam, Camboja, and Siam.

Constituents.—Gum, 16 to 20 per cent.; resin or cambogic acid, about 80 per cent.

Action and Uses.—Hydragogue cathartic. Dose, in substance, gr. ss–v.

Gamboge enters in comp. cathartic pills: Calomel, gr. i; jalap, gr. i; comp. ext. colocynth, gr. $1\frac{1}{3}$; and gamboge, gr. $\frac{1}{4}$, in each pill. Dose, 1 to 4 pills.

It is rarely prescribed alone, owing to its violence and harshness, but is combined with other cathartics that modify its action.

It is thought to be diuretic in small doses, repeated at short intervals.

GAULTHERIA.—Partridge-berry.

Origin.—Leaves of Gaultheria Procumbens, *Lin. Nat. ord.*, Ericaceæ.

Habitat.—Canada and United States; cool, damp woods.

Constituents.—Volatile oil, arbutin, ericalin, urson, tannin, sugar, gum, etc.

Officinal Preparations, U. S.

Oleum Gaultheriæ. Dose, gtt. v–xx.

Syrupus Sarsaparillæ Compositas.

Trochischi Morphiæ et Ipecacuanhæ.

Action and Uses.—Stimulant, astringent, aromatic tonic, diuretic, emmenagogue.

Chiefly used in flavoring.

GELSEMIUM.—Yellow Jasmine.

Origin.—Root of Gelsemium Sempervirens, *Alton. Nat. ord.*, Loganiaceæ.

Habitat.—Southern United States. Creeping rhizome and rootlets used.

Constituents.—Volatile oil, gelseminia, gelseminic acid, resin, starch.

Officinal Preparations, U. S.

Extractum Gelsemii Fluidum. Dose, gtt. or m.v–x.

Tinctura Gelsemii (unofficinal). Dose, gtt. x–xl.

Antagonists and Incompatibles.—The caustic alkalies, tannic acid, chemically; diffusible stimulants, belladonna, digitalis, etc., physiologically.

Synergists.—Conium, physostigma, tobacco, opium, etc.

Action and Uses.—Nervine, antispasmodic, sedative.

Especially useful in spasmodic coughs, neuralgias of fifth pair, and asthmas.

GENTIANA.—Gentian.

Origin.—Root of Gentiana Lutea, *Lin.;* also, G. Purpurea, *Lin.;* G. Pannonica, *Lin.;* G. Punctata, *Lin. Nat. ord.*, Gentianaceæ.

Habitat.—Mountains of Central and Southern Europe.

Constituents.—Gentiopicrin, gentisic acid, pectin, fixed oil.

Officinal Preparations, U. S.

Extractum Gentianæ. Dose, gr. ij–iv.

Extractum Gentianæ Fluidum. Dose, m.x–xxx.

Infusum Gentianæ Compositum. Dose, f℥i–ij.

Tinctura Gentianæ Composita. Dose, f℥i–iv.

Antagonists and Incompatibles.—Sulphate of iron, silver and lead salts; agents which promote waste.

Synergists.—Iron, mineral acids, pepsin, bismuth, and, under some circumstances, the alkalies.

Action and Uses.—Aromatic bitter tonic.

GLYCERINA.—Glycerine.

A sweet principle obtained from fats and fixed oils. It is a colorless, inodorous, syrupy liquid, sp. gr. 1.25, with chemical formula, $C_3H_8O_3$. U. S.

Action and Uses.—Antiseptic, emollient, solvent, vehicle.

The basis of the officinal glycerites.

GLYCYRRHIZA.—Licorice.

Origin.—Root of Glycyrrhiza Glabra, *Lin. Nat. ord.*, Leguminosæ, Papilionaceæ.

Habitat.—Southern Europe; cultivated.

Constituents.—Glycyrrhizin, about 6 per cent.; sugar, starch, asparagin, resin.

Officinal Preparations, U. S.

Extractum Glycyrrhizæ Fluidum (for flavoring).

Extractum Glycyrrhizæ. Licorice.

Action and Uses.—Demulcent, expectorant.

Especially useful as a vehicle.

GOSYPII RADICIS CORTEX.—Bark of Cotton-root.

Origin.—Gossypium Herbaceum, *Lin.*, and other species of Gossypium. *Nat. ord.*, Malvaceæ.

Habitat.—Subtropical Asia, Africa; cultivated in United States.

Constituents.—Chromogene becoming red resin; yellow resin, fixed oil, little tannin, sugar, starch.

Officinal Preparations, U. S.

Extractum Gossipii Radicis Fluidum. Dose, f℥ss–i.

Action and Uses.—Emmenagogue, oxytoxic.

Supposed to be used in the Southern States as a parturifacient.

GOSSYPIUM.—Cotton.

Origin.—Filamentous substance from the seed of Gossypium Herbaceum, *Lin.*, and other species of Gossypium. *Nat. ord.*, Malvaceæ.

Habitat.—Tropical Asia, Africa; cultivated in tropical and subtropical countries.

Constituents.—Cellulose and fixed oil, 9 to 10 per cent.; the latter removed by repeated boiling with caustic alkali, making "absorbent cotton."

Officinal Preparations, U. S.

Pyroxylon. Gun-cotton.

Collodium. Pyroxylon dissolved in ether and alcohol.

Action and Uses.—Absorbent cotton is extensively used as a surgical dressing.

Aurists make of it an artificial membrana tympani.

Collodium.—Collodion.

Collodium cum Cantharide. Blistering Collodion.

Collodium Flexile. Flexible Collodion.

Its use meets two indications, viz.: (1) To exclude air and hinder scratching; (2) to exert moderate astringency when dried. It is therefore used in small-pox to prevent pitting; in herpes zoster and erysipelas; to abort small boils; to facilitate careful union of incisions.

The blistering collodion is a counter-irritant.

GUAIACUM.—Guaiac.

Origin.—The heart-wood of Guaiacum Officinale, *Lin. Nat. ord.*, Zygophyllaceæ.

Habitat.—West India and Northern South America.

Constituents.—Resin, 20 to 25 per cent.; extractive soluble in water, 3 to 4 per cent.

Guaiaci Lignum.

Guaiaci Resinæ. Resin by spontaneous exudation by incision, by dry heat, or by decoction of the wood. U. S.

Officinal Preparations, U. S.

Tinctura Guaiaci. Dose, f℥i–ij.

Tinctura Guaiaci Ammoniata. Dose, f℥i–ij.

Antagonists and Incompatibles.—Spirits of nitrous ether, mineral acids.

Synergists.—Agents which promote cutaneous activity; its action aided by warmth and warm diluent drinks.

Action and Uses.—Diaphoretic, alterative, sialogogue.

Used with marked success in tonsillitis, half-drachm doses every four hours; also, chronic gout, rheumatism, lumbago, sciatica, etc.

As it is acrid and disagreeable, it should be given in emulsion with mucilage, yelk of eggs, or milk.

GUTTA-PERCHA.—Gutta-percha.

Origin.—Concrete juice of Dichopsis (Isonandra, *Hooker*) Gutta, *Bentley et Trimen. Nat. ord.*, Sapotaceæ.

Habitat.—Malay peninsula and islands.

Constituents.—A hydro-carbon ($C_{20}H_{32}$), fine white powder, a yellow resin ($C_{20}H_{32}O$), and a white crystalline resin ($C_{20}H_{32}O_2$).

Officinal Preparation, U. S.

Liquor Gutta-perchæ (in chloroform). Used in charta sinapis.

Action and Uses.—Adhesive and protective for wounds; also, for bougies, pessaries, caustic-holders, splints, etc.

HÆMATOXYLON.—Logwood.

Origin.—Heart-wood of Hæmatoxylon Campechianum, *Lin. Nat. ord.*, Leguminosæ, Papilionaceæ.

Habitat.—Central America; naturalized in the West Indies.

Constituents.—Hæmatoxylin, resin, tannin, fat.

Officinal Preparations, U. S.

Decoctum Hæmatoxyli. Dose, f℥ij.

Extractum Hæmatoxyli. Dose, gr. x.

Antagonists and Incompatibles.—Mineral acids, salts of antimony, lead, silver, the persalts of iron, and alkalies. Vegetable alkaloids and gelatine form insoluble precipitates.

Synergists.—Tonics, bitters; agents that increase waste.

Action and Uses.—Astringent, tonic.

Agreeable remedy for diarrhea, and is especially well taken by children.

Used in combination with other astringents, catechu, etc.

HUMULUS.—Hops.

Origin.—The Strobiles of Humulus Lupulus, *Lin. Nat. ord.*, Urticaceæ, Cannabineæ.

Habitat.—Northern temperate zone; cultivated.

Constituents.—Volatile oil, 0.8 per cent.; resin, 9 to 18 per cent.; tannin, 3 to 4 per cent.; ash, 7 to

10 per cent. The aromatic and bitter virtues reside in the glands.

Lupulina. The yellow powder from the strobiles.

Officinal Preparations, U. S.

Infusum Humuli (ʒij to Oi). Dose, *ad lib.*

Tinctura Humuli (ʒiss to Oi). Dose, fʒss–ij.

Extractum Lupulinæ Fluidum (ʒxvi to Oi). Dose, fʒss–ij.

Oleo-resinæ Lupulinæ. Dose, m.x–fʒi.

Tinctura Lupulinæ (ʒij to Oi). Dose, fʒss–ij.

Action and Uses.—Tonic, sedative anodyne, astringent, anaphrodisiac.

In the form of a pillow or poultice, hops has long been used, and as such is thought to act happily in restlessness, or slight nervousness.

With capsicum it is a good substitute, in effect, for alcohol, in old drunkards: ℞. Ext. Lupulinæ fl'd, tinc. capsici, āā fʒi. M. S. Teaspoonful when needed.

HYDRARGYRUM.—Mercury. Hg.

Mercury is a silver-white metal, liquid at ordinary temperatures, and has a specific gravity of 13.5. The Romans and Arabs used it externally; but the Hindoos were the first to use it internally. It occurs native, but usually in ores, the sulphide or cinnabar being most widely known, and the source from which it is obtained, by distillation with iron or lime, for commercial and medicinal purposes.

Officinal Preparations, U. S.

I. IN THE METALLIC STATE.

Hydrargyrum. Mercury. Quicksilver.

Emplastrum Ammoniaci cum Hydrargyri.

Emplastrum Hydrargyri.

Hydrargyrum cum Creta (Hg. 37½ per cent.). Dose, gr. x–xxx.

Pilulæ Hydrargyri (Hg. 33 per cent.). Dose, 1 to 3 pills.

Unguentum Hydrargyri (Hg. 50 per cent.).

II. OXIDIZED.

Hydrargyri Oxidum Rubrum. Used externally.

Ung. Hydrarg. Oxidi Rubri (ʒi–ʒvij).

Hydrargyri Oxidum Flavum. Used externally.

Ung. Hydrarg. Oxidi Flavi (ʒi–ʒviij).

III. SULPHURETTED.

Hydrargyri Sulphuretum Rubrum. For fumigating.

IV. AS PROTOCHLORIDE (SUBCHLORIDE?).

Hydrargyri Chloridum Mite. Dose, gr. ss–x.

Pilulæ Antimonii Compositæ (Calomel, 16⅔ per cent.).

Pilulæ Cathartica Compositæ (each pill contains, calomel, ext. jalap, āā gr. i; ext. colocynth. comp., gr. 1⅓; and gamboge, gr. ¼). Dose, 1 to 4 pills.

V. AS BICHLORIDE (PROTOCHLORIDE [?] PERCHLORIDE, Br.).

Hydrargyri Chloridum Corrosivum. Dose, gr. $\frac{1}{20}$–$\frac{1}{10}$.

Hydrargyrum Ammoniatum. Used externally.

Unguentum Hydrarg. Ammoniati (gr. xl to ʒi).

VI. WITH IODINE.

Hydrargyri Iodidum Rubrum (biniodide). Dose, gr. $\frac{1}{16}$.

Ung. Hydrarg. Iodi. Rub. (gr. xvi to ʒi).

Liquor Arsenici et Hydrarg. Iodidi (Donovan's Solution). Dose, m.v–x.

Hydrarg. Iodidum Viride (protoiodide). Dose, gr. $\frac{1}{4}$.

VII. WITH CYANOGEN.

Hydrargyri Cyanidum. Dose, gr. $\frac{1}{16}$–$\frac{1}{8}$.

VIII. WITH ACIDS.

Liquor Hydrarg. Nitratis. As a caustic.

Ung. Hydrarg. Nitrat. (Citrine Ointment).

Hydrarg. Sulphas Flava (Turpeth Mineral). Dose, gr. $\frac{1}{4}$–$\frac{1}{2}$. As an emetic, dose, gr. ij.

OLEATE OF MERCURY (unofficinal).

Of from 5 to 20 per cent. strength, ranging from a pale-yellow color to a deep-yellow, and from an oily fluid to a stiff ointment. An excellent substitute for mercurial ointment, clean, and may be scented to taste. In the treatment of syphilis by inunction, this form is to be preferred; the same precautions to be observed as in other treatment.

Antagonists and Incompatibles.—Corrosive sublimate, with alkalies, their carbonates, lime-water, tartar emetic, nitrate of silver, acetate of lead, albumen, iodide of potassium, soaps, various vegetable infusions, including cinchona.

Calomel, with alkalies, alkaline earths, alkaline carbonates, iron, lead, copper. It should not be given with iodine (forms red iodide), or nitro-muri-

atic acid (forms corrosive sublimate). It forms corrosive sublimate with the chlorides of potassium, sodium, and ammonium.

In poisoning by corrosive sublimate, albumen (the white of eggs, four eggs to each grain) should be followed by immediate emesis.

Physiologically and therapeutically, mercury is opposed by chlorate of potassium, bitter tonics, stimulants, and restorative medicines in general—quinia, iron, etc.; chemically, by iodide of potassium, by re-dissolving it in the system.

Synergists.—Depressing agents, antimony, alkalies, especially alkaline chlorides.

Action and Uses.—Mercury has a most diversified range of powers. It is antisyphilitic, antiphlogistic, chologogue, and vermicide.

As an antisyphilitic, it acts by its general catalytic power, first upon lower organisms, then upon new growths, and finally upon normal structures. As the specific for syphilis, it electively antidotes its special entity, whatever it is.

As an antiphlogistic, it acts by modifying the blood, especially the components of fibrin, and, in some way, the amœboid wanderings of the leucocytes. Absorption is promoted, and lymph does not become organized under its use.

As a chologogue, it acts by stimulating the bile-producing function of the liver, as it passes out of the system through it, in common with all other glands, kidneys, salivary, liver, pancreas, etc. It stimulates the liver, however, especially, being perhaps the only chologogue *per se*.

As a vermicide, it destroys the parasite directly; and when it does not succeed in this, it is acknowledged to be an excellent adjuvant to vermicides and vermifuges.

Possessing such extensive powers, this agent is very valuable. But as its power is due principally, if not entirely, to its catalytic nature, care must be observed in its exhibition. It becomes a poison when pushed too far, and should then be withdrawn, or the dose diminished, preferably the latter. Its poisonous effect is first manifested by the blue line along the gum, near the incisors soonest, the fetid breath, and increasing salivation.

Salivation is but rarely seen in the aged, and never in infants, depending upon shrunken glands in the one, and rudimentary glands in the other, hence it is supposed they escape its catalytic power. But infants do experience its baleful effects in a remote way, seen in imperfect dentures and perverted nutrition of the tooth-matrices. Their teeth are imperfect, or are so modified as to yield to decay early.

Again, salivation may occur during a course of iodide of potassium after a course of mercury, due to the elimination of mercury re-dissolved in the system by it.

This agent becomes incidentally a tonic. In syphilis, by relieving the specific cachexia, and in debility depending upon an obstructed portal circulation and deficient quantity of bile, by its chologogue power.

By its local excitation in passing through the glands of the intestines, it becomes a purgative.

HYDRASTIS.—Hydrastis. Golden-seal.

Origin.—Root of Hydrastis Canadensis, *Lin. Nat. ord.*, Ranunculaceæ.

Habitat.—North America, east of the Mississippi, in woodlands.

Constituents.—Berberina, 3 to 4 per cent.; hydrastia, xanthropuccina, starch, sugar, etc.

Officinal Preparations, U. S.

Extractum Hydrastis Fluidum. Dose, f℥ij–iv.

Tinctura Hydrastis (unofficinal). Dose, m.x–f℥i.

Antagonists and Incompatibles.—Alkalies, tannic and muriatic acids.

Synergists.—Vegetable tonics, especially berberis vulgaris and columba, both of which contain berberina.

Action and Uses.—Tonic, deobstruent, alterative, diuretic.

In combinations, care should be taken to avoid tannic acid.

In the treatment of subacute inflammations—catarrhs—the tincture or fluid extract (dose 5 to 15 drops) is specially useful.

As an intermittent it ranks close to quinia.

Used also in debility from acute diseases.

ICTHYOCOLLA.—Isinglass.

From the swimming-bladder of Acipenser Huso, and of other fishes. U. S.

Isinglass is only used in medicine as an article of diet for the sick, and as the basis of glue for court-plaster.

HYOSCYAMUS.—Henbane.

Origin.—Leaves and seed of Hyoscyamus Niger, *Lin. Nat. ord.*, Solanaceæ.

Habitat.—Europe and Asia; naturalized in North America.

Constituents.—Hyoscyamia, hyoscypicrin, mucilage, albumen, from leaves; fixed oil, 25 per cent.; mucilage, proteids, hyoscyamia, from seeds.

Hyoscyami Folia et H. Semen. U. S.

Officinal Preparations, U. S.

Extractum Hyoscyami (from the juice). Dose, gr. i–iij.

Extractum Hyoscyami Alcoholic. (dried leaves). Dose, gr. i–iij.

Extractum Hyoscyami Fluidum (leaves). Dose, m.v.

Tinctura Hyoscyami (dried leaves, ʒij to Oi). Dose, fʒss–ij.

Antagonists and Incompatibles.—Caustic alkalies. Physiologically, physostigma. Opium, within certain limitations.

In poisoning, these two should be used, followed by prompt emesis.

Synergists.—Excito-motors, belladonna, digitalis, ergot, etc.

Action and Uses.—Anodyne, hypnotic, dilates the pupil, narcotic.

One of a group—belladonna, stramonium, hyoscyamus—and is usually combined with them.

The hypnotic property is taken advantage of in cases of young children, where opium may not be

used. It is also combined with purgatives to prevent griping.

IODINUM.—Iodine. I.

A bluish-gray, non-metallic element, usually in scales, obtained principally from ashes of sea-weeds. Obtained by Courtois, in 1812, in the residual liquor of the process of procuring soda from kelp (ashes of sea-weed). Occurs in sea-water, and several kinds of mineral-waters, in sea-weeds, sponge, corals, and some moluscous animals. Its name means violet-colored, given because of the color of its vapor.

Officinal Preparations, U. S.

Tinctura Iodini (ʒi to Oi). For external use.

Tinctura Iodini Composita (Iodini, ʒss; iod. potas., ʒi; alcohol, Oi). Dose, gtt. x–xx.

Liquor Iodini Compositus (Iodid., ʒvi; potas. iod., ʒiss; aq. dest., Oi). Dose, m. v–xx.

Unguentum Iodini.

Unguentum Iodini Compositum.

Liquor Arsen. et Hydrarg. Iodini (Donovan's Sol.). Dose, gtt. v–x.

Syrupus Ferri Iodidi (Iod. of iron, gr. vij$\frac{1}{3}$ to fʒi). Dose, m.x–xxx.

Pilulæ Ferri Iodidi (Ferri iod., gr. i; ferri redact., gr. $\frac{1}{5}$, in each).

Antagonists and Incompatibles.—Mineral acids, metallic salts, vegetable alkaloids.

Its chemical antidote is starch, forming the iodide of starch, which, from danger of absorption, should be removed at once.

Water precipitates the tincture, but dilutes the compound tincture.

Therapeutically, those remedies which promote constructive metamorphosis, and the vaso-motor tonics, quinia, digitalis, cold, etc.

Synergists.—Alkalies and other remedies which increase waste. Under some circumstances mercurials, especially, are synergistic.

Action.—Iodine is a powerful sorbefacient, acting upon the entire lymphatic system, composed of vessels, glands, and spaces (serous). It modifies the blood much in the manner of mercury, and, by this action upon the fibrin factors and albumen, causes it to turn to even the normal tissues themselves.

It has also a positive chemical action upon metals in the system, and, by combination rendered soluble, they are eliminated. This is especially the case with the insoluble albuminates of mercury and lead, which are readily dissolved by the iodides. Partly owing to this power, and partly to an inherent catalytic power, it is antisyphilitic, useful in the secondary or tertiary stage, when specific new growths have begun. This effect obtains after a course of mercury.

It is disinfectant by coagulating the albumen of the tissues, when applied locally.

It is also counter-irritant, and even vesicant.

The iodide of potassium is the best form for its exhibition, as it loses no power by the combination, and is even more readily introduced. Its effect is sometimes manifested by a coryza and considerable irritation of nasal and pharyngeal mucous mem-

branes. These symptoms, exaggerated by idiosyncrasy or saturation of the system, become what is known as iodism, which is thought to be due to some occult neurotic effect not thoroughly understood.

As a sorbefacient, it is used in the treatment of goiter, hydrocele, and other chronic enlargements not sensitive to moderate pressure. The first effect is to increase the inflammatory symptoms, but in a few days, at most, they commence to disappear, and the cure is obtained. Some have thought this the result in all cases in which it is effective, and rely on it.

Dentists employ the tincture to remove tartar from the teeth; to stimulate receding gum; and as an injection in alveolor abscess. In the latter case it is deodorant by the sulphuretted hydrogen resulting in a precipitation of sulphur and the formation of hydriodic acid. This acid, it is thought, favors resolution.

IODOFORMUM.—Iodiform.

A teriodide of formyl, occurring in yellow, scaly crystals, with a saffron-like odor.

Prepared by decomposing an alcoholic solution of iodide of potassium with chlorinated lime. It is insoluble in water, but soluble in alcohol, ether, and the fixed and volatile oils. Decomposed by heat at 250 F., giving off violet vapors.

Action and Uses.—Local anæsthetic, disinfectant.

Used as a powder, dusted on; or suppositories, urethral especially (gr. v–x); or application in chron-

ic or irritable inflammations. A twenty per cent. ethereal solution sometimes advised in chronic sore-throat.

IPECACUANHA.—Ipecacuanha.

Origin.—Root of Cephælis Ipecacuanha, *A. Richard. Nat. ord.*, Rubiaceæ, Coffeæ.

Habitat.—Brazil to Bolivia and New Granada, in damp forests.

Constituents.—Emetia, 1 per cent.; ipecacuanhic acid, resin, pectin, starch, sugar.

Officinal Preparations, U. S.

Extractum Ipecacuanhæ Fluidum. Dose, gtt. xx–xxx.

Pulvis Ipecacuanhæ Compositus. Dose, gr. x.

(Dover's Powder: Ipecac., 1 part; opium, 1 part; sulph. potash, 8 parts.)

Trochischi Ipecacuanhæ.

Trochischi Morphiæ et Ipecacuanhæ (Morph., gr. $\frac{1}{40}$.)

Syrupus Ipecacuanhæ (f℥ij ext. to syr. f℥xxx). Dose, f℥i–f℥ss.

Vinum Ipecacuanhæ (f℥ij ext. to sherry wine f℥xxx). Dose, f℥i–iv.

Antagonists and Incompatibles.—Salts of lead and mercury, vegetable acids, and astringent infusions. Bismuth, carbolic acid, hydrocyanic acid, and narcotics generally, hinder its action.

Synergists. — The local and systemic emetics. Opium and warm diluents promote its diaphoretic action.

Action and Uses.—Expectorant, nauseant, emetic, tonic (in small doses, gr. $\frac{1}{8}$ to $\frac{1}{4}$).

As an emetic, four grains every half hour, with free ingestion of warm water.

In epidemic or acute dysentery, large doses (gr. xx to ʒi), combined with, or preceded by, an opiate, to obtain tolerance, is used with success; not so good in chronic forms.

JALAPA.—Jalap.

Origin.—The tuber of Exogonium Purga, *Bentham. Nat. ord.*, Convolvulaceæ.

Habitat.—Eastern Mexico.

Constituents.—Starch, gum, sugar, etc.; resin, 12 to 22 per cent.; about one-tenth of the resin is soluble in ether and alkaline solutions, and is precipitated by acids; the remainder is glucoside convolvulin, which is soluble in alkalies, and converted into convolvulic acids, which are soluble in water.

Officinal Preparations, U. S.

Extractum Jalapæ. Dose, gr. v–x.

Pulvis Jalapæ Compositus (Jalap 1, and cream of tartar 2 parts). Dose, gr. xx–ʒi.

Resina Jalapæ. Dose, gr. ij–iv.

Tinctura Jalapæ (powd., ʒiij to Oi). Dose, fʒi–ij.

Action and Uses.—Diuretic, hydragogue cathartic.

Used to carry off excessive fluids in general dropsy and ascites.

JUGLANS.—Butternut.

Origin.—Inner bark of Juglans Cinerea, *Lin. Nat. ord.*, Juglandaceæ.

Habitat.—North America.

Constituents.—Nucin, fixed oil, 14 per cent.; trace of volatile oil and tannin.

Officinal Preparation, U. S.

Extractum Juglandis. Dose, gr. v–x, laxative; gr. xx–xxx, purgative.

Action and Uses.—Cathartic, tonic.

Like rhubarb, it evacuates the bowels without debilitating. Given in decoction, or the officinal extract.

JUNIPERUS.—Juniper.

Origin.—Fruit of Juniperus Communis, *Lin. Nat. ord.*, Coniferæ.

Habitat.—Northern hemisphere.

Constituents.—Volatile oil, ½ to 2½ per cent.; sugar, 30 per cent.; resins, 10 per cent.; yellowish juniperin, wax, fat, mucilage, etc.

Officinal Preparations, U. S.

Infusum Juniperi (berries, ʒi to Oi). Dose, fʒiv–Oi.

Oleum Juniperi. Dose, gtt. ij–xv.

Spiritus Juniperi Compositus (oil, ʒiss to Oviij). Dose, fʒij–iv.

Spiritus Juniperi (oil, fʒi to Oiij). Dose, fʒss–ij.

Action and Uses.—Stimulant, diuretic; externally, anodyne.

Acts better in combination with other diuretics.

KINO.—Kino.

Origin.—Inspissated juice of Pterocarpus Marsupium, *Roxburgh.* *Nat. ord.*, Leguminosæ, Papilionaceæ.

Habitat.—East Indies.

Constituents.—Kino-tannic acid, kino red, pyrocatechin, kinoin; ash, 1.3 per cent.

Officinal Preparations, U. S.

Tinctura Kino (ʒiss to Oi). Dose, fʒi.

Antagonists and Incompatibles. — Mineral acids, salts of antimony, lead, and silver, persalts of iron, and the alkalies; vegetable alkaloids and gelatine form insoluble precipitates.

Synergists. — Tonics, bitters; agents promoting waste.

Action and Uses.—Tonic, astringent.

KRAMERIA.—Rhatany.

Origin.—Root of (1) Krameria Triandra, *Ruiz et Pavon;* (2) K. Tomentaso, *St. Hilaire.* *Nat. ord.*, Polygalaceæ, Krameriеæ.

Habitat.—1. Peru and Bolivia. 2. New Granada.

Constituents.—Kramero-tannic acid, about 20 per cent.; rhatanic red, starch.

Officinal Preparations, U. S.

Extractum Krameriæ. Dose, gr. v–x.

Extractum Krameriæ Fluidum. Dose, gtt. xx.

Infusum Krameriæ (ʒi to Oi). Dose, fʒi–ij.

Syrupus Krameriæ. Dose, fʒss.

Tinctura Krameriæ (ʒiij to Oi). Dose, fʒi–ij.

Antagonists and Incompatibles. — Mineral acids, salts of antimony, lead, and silver, persalts of iron, the alkalies; vegetable alkaloids and gelatine form insoluble precipitates.

Synergists. — Tonics, bitters; agents increasing waste.

Action and Uses.—Gently tonic, astringent (due to tannin).

LACTUCARIUM.—Lactucarium.

Origin.—Concrete juice of Lactuca Virosa, Sativa, and Scariola, *Lin. Nat. ord.*, Compositæ.

Habitat. — Southern and Central Europe; cultivated (garden lettuce).

Constituents. — Lactucin, lactucic acid, lactucerin or lactuon, lactucopicrin, caoutchouc, resin, sugar, mucilage, asparagin, trace of volatile oil; ash, 8 to 10 per cent.

Officinal Preparation, U. S.

Syrupus Lactucarium (℥i to Oi). Dose, f℥ss.

Action and Uses.—Feeble narcotic, laxative, diuretic.

Sometimes substituted for opiates in children.

LAVANDULA.—Lavender.

Origin.—Flowers of Lavandula Vera, *De Candalle. Nat. ord.*, Labiatæ.

Habitat.—Southern Europe; cultivated.

Constituents.—Volatile oil, 1½ per cent.; resin, little tannin.

Officinal Preparations, U. S.

Oleum Lavandulæ. Dose, gtt. iij–x.

Spiritus Lavandulæ (is in Mist. Ferri Comp.). Dose, f℥ss–i.

Spiritus Lavandulæ Compositus. Dose, f℥i–iv.

Action and Uses.—Stimulant, carminative, nervine, errhine.

The oil is used in perfumery.

LEPTANDRA.—Leptandra.

Origin.—The root of Leptandra Virginica, *Nuttal. Nat. ord.*, Scrophulariaceæ.

Habitat.—North America, in low grounds.

Constituents.—Leptandrin; resin, 6 per cent.; saponin, tannin, mannite, gum, and possibly a volatile alkaloid.

Extractum Leptandræ Fluidum (unofficinal). Dose, m.xxx–f℥i.

Dose, in substance, gr. x–℥i.

Action and Uses.—Culver's root is emetic, cathartic (chologogue).

In small doses, thought to be like rhubarb.

The fluid extract is aperient.

LIMONES.—Lemon.

Origin.—Citrus Limonum, *Risso. Nat. ord.*, Aurantiaceæ.

Habitat.—India; cultivated in subtropical countries.

Constituents.—Citric acid, 7 to 9 per cent.; malic acid, mucilage.

On keeping lemons for months, the citric acid is changed to sugar and carbonic acid.

Limonis Cortex. Lemon-peel.

Limonis Succus. Lemon-juice. Dose, f℥i–iv.

Oleum Limonis.

Acidum Citricum.

Officinal Preparations, U. S.

Spiritus Limonis. Used for flavoring.

Mistura Potassii Citratis (Neutral Mixture). Dose, f℥i–ij.

Syrupus Limonis. As a vehicle.

Spiritus Ammoniæ Aromaticus. Dose, f℥ss–i.

Syrupus Acidi Citrici. As a vehicle.

Action and Uses.—Refrigerant, tonic, antispasmodic, antiscorbutic.

It is refrigerant, possibly, more because it can be so readily formed into effervescing and cooling drinks than from any inherent properties.

LINUM.—Flaxseed.

Origin.—Linum Usitatissimum, *Lin. Nat. ord.*, Linaceæ.

Habitat.—Levant and Southern Europe; cultivated and spontaneous in most temperate countries.

Constituents.—Fixed oil, 30 to 35 per cent.; mucilage, 15 per cent.; proteids, 25 per cent.; resin, wax, sugar; ash, 3 per cent.

Oleum Lini. Flaxseed oil (Linseed oil).

Lini Farina. Flaxseed meal.

Officinal Preparations, U. S.

Infusum Lini Compositum. As a demulcent. Dose, f℥i–iv.

Ceratrum Resinæ Compositum. Deshler's Salve.

Linimentum Calcis. Carron oil. For burns.

Action and Uses.—Demulcent, antiphlogistic, as a poultice.

LITHIUM.—Lithium. Li.

Lithium is the lightest solid body known, sp. gr. 0.59, floats in naphtha. Discovered by Arfwedson, in 1818; occurs in the minerals petalite and lepidolite, from Sweden, and in many mineral waters.

Officinal Preparations, U. S.

Lithii Carbonas. Dose, gr. iij–vi.

Lithii Citras. Dose, gr. v–x.

Antagonists and Incompatibles.—Acids, acidulous salts, and metallic salts.

Synergists.—Alkalies; agents promoting waste, iodides, etc.

Action and Uses.—Diuretic, forming a very soluble compound with urea, which favors its rapid elimination.

Used in chronic rheumatism and rheumatic gout, with success.

The bromide (unofficinal) is most used, especially after the subsidence of the acute stage.

℞. Lithii brom., ℥iij; syr. Zingerb., f℥ss; aq. dest., f℥iss. M. S. Teaspoonful three times a day.

℞. Lithii carb., ℥i; acid. citric., ℥ij; aq. dest., f℥ij. M. S. Teaspoonful every four hours.

LOBELIA.—Lobelia.

Origin.—Lobelia Inflata, *Lin.* *Nat. ord.*, Lobeliaceæ.

Habitat.—North America, in fields and open woods.

Constituents.—Lobelina, lobelocrin, lobelic acid, resin, fat, gum, wax.

Officinal Preparations, U. S.

Acetum Lobelia (f℥ij to Oi). Dose, gtt. x to f℥i–ij.

Tinctura Lobelia (℥ij to Oi). Dose, gtt. x to f℥i–ij.

Antagonists and Incompatibles.—The caustic alkalies (decompose the lobelina). The depression of the circulation caused by it, met by digitalis, belladonna, ergot, and other vaso-motor excitants, as alcohol, ether, ammonia, etc.; effect on the nervous system, by strychina, picrotoxine, thebaia, etc.

Synergists.—All motor depressants.

Action and Uses.—Expectorant, emetic, diuretic, diaphoretic, narcotic, nervine, antispasmodic.

In asthma, may be combined with the iodide and bromide of ammonium: ℞. Tinct. lobelia, f℥i; ammon. iodid., ℥ij; amm. bromid., ℥ij; syr. tolutan., f℥ij. M. S. Teaspoonful every one, two, or three hours.

MAGNESIUM.—Magnesium. Mg.

A silver-white metal, obtained by decomposing chloride of potassium or sodium, hard, ductile, not acted on by water or air, except at high tempera-

ture, when it oxidizes, burns with an intense white light, and deposits a cloud of magnesia. As the chloride, is found in sea-water; as oxide, in mineral waters.

It exists in most plants, as wheat-straw; in small quantity found in the animal system, especially the urine and urinary calculi.

Magnesii Carbonas. Dose, ʒss–ʒi.

Magnesii Sulphas (Epsom Salts). Dose, ʒi–ʒi.

OFFICINAL PREPARATIONS, U. S.

Magnesia. Dose, ʒi–iv.

Trochischi Magnesiæ (each, gr. iij).

Liquor Magnesiæ Citras. Dose, fʒij–iv.

Synergists.—Cathartics and purgatives—senna, the salines, etc.

Action and Uses.—Magnesia and its carbonate are antacid, and act secondarily as laxative (thought to be transformed to bicarbonate by the carbon dioxide in the intestines).

The sulphate of magnesium is the great hydragogue cathartic. Small doses, largely diluted, taken every morning, are recommended for constipation. Boiling with coffee easily conceals the taste, which is disagreeable to some, without impairing its action; combining with syrup of ginger and mint-water, is another recourse.

Its most important use (sulph. magn.) is in lead-colic, combined with dilute sulphuric acid: ℞. Magn. sulphat., ʒi; acid. sulph. dil., fʒi; aq. dest., fʒiv. M. S. Tablespoonful every three hours.

Acute dysentery is treated with it: Saturate seven

ounces of water with it, add one ounce of dilute sulphuric acid. Take of this a tablespoonful every hour or two, till it operates. Sulphate of morphia may be combined with it; or starch and morphia enemata may be used with propriety.

MANGANESIUM.—Manganese. Mn.

This metal was discovered by Gahn, in 1774. It is hard, brittle, of grayish color, and emits a peculiar odor when handled, or in moist air; sp. gr. 8. When pure it oxidizes readily in the air, requiring to be kept under naphtha.

It forms numerous combinations with oxygen, but the black oxide (or peroxide) is the only officinal form.

Manganesii Oxidum Nigrum. Dose, gr. iij–xx.

Manganesii Sulphas. Dose, gr. v–xx.

Unofficinal Preparations.

Syrupus Ferri et Manganesii Iodidum. Dose, m.x–f℥i.

Ferri et Manganesii Carbonas Sach. Dose, gr. v–xx.

Syrupus Manganesii Iodidum; same dose as offic in. syr. of iron.

Potassæ Permanganas. Dose, gr. ¼–i.

(In prescribing this, water free of organic matter is necessary.)

Antagonists and Incompatibles.—Salts of lead, silver, and mercury; caustic alkalies.

Synergists.—Iron (hæmatic effect); salts of copper, silver, zinc (neurotic effect).

Action and Uses.—In small doses, alterative, tonic; large, purgative.

In combination with iron, is given in anæmia and chlorosis.

Gastrodynia and pyrosis are relieved by ten to fifteen grain doses of the black oxide (Dr. Leard)—the *washed* oxide.

To promote constructive metamorphosis: ℞. Quiniæ sulph., ferri sulph., exsic., mangan. sulph. exsic., āā ℈i. M. ft. pil. No. xx. Sig. One pill three times a day.

In malarial jaundice: ℞. Chinoidin, ʒi; mangan. sulph. excisc., ℈ij. M. ft. pil. No. xx. S. One pill three times a day.

The permanganate of potassa is a powerful oxidizing agent, yielding oxygen readily in the form of ozone. Externally, it is used as a disinfectant and deodorizer; but as its effect is not lasting, it must be repeated often. Internally, for flatulence of obesity, dyspepsia, the so-called uric acid diathesis, erysipelas, septicæmia, and diphtheria, small doses, in pure water, or in combination with other agents.

MANNA.—Manna.

Origin.—Fraximus Ornus, *Lin.* *Nat. ord.*, Oleaceæ.

Habitat.—Basin of the Mediterranean.

(Juice exuding from incisions, allowed to harden.)

Constituents.—Mannite, 90 per cent., in the best varieties; glucose, mucilage, resin, fraxin (largest in inferior grades).

Action and Uses.—Demulcent, laxative. Dose (syr., f℥i–f℥i; boiled in milk), f℥i–iij.

MARRUBIUM.—Hoarhound.

Origin.—Marrubium Vulgare, *Lin.* *Nat. ord.*, Labiatæ.

Habitat.—Europe, Central Asia; naturalized in America; cultivated.

Constituents.—Little volatile oil, tannin, resin, marrubiin.

Action and Uses.—Stimulant, tonic, resolvent, deobstruent, anthelmintic.

Dose, in infusion, about gr. xxx.

For colds: Decoction (℥i to Oi), syrup, and candy.

MATICO.—Matico.

Origin.—Artanthe Elongata, *Miquel.* *Nat. ord.*, Piperaceæ.

Habitat.—Tropical America.

Constituents.—Volatile oil, 1½ per cent.; pungent resin, artanthic acid, tannin, mucilage, etc.

Officinal Preparation, U. S.

Extractum Matico Fluidum. Dose, f℥ss–i.

Action and Uses.—Stimulant, tonic, vulnerary, styptic (externally).

Used in gonorrhea and leucorrhœa.

MENTHA PIPERITA.—Peppermint.

Leaves and top of Mentha Piperita. U. S.

MENTHA VIRIDIS.—Spearmint.

Leaves and top of Mentha Viridis. U. S.

Habitat.—Wild in Europe and North America; cultivated.

Constituents.—Volatile oil, ½ to 1 per cent.; resin, gum, little tannin (M. piperita).

Officinal Preparations, U. S.

Aqua Menthæ Piperitæ. Used as a vehicle.

Oleum Menthæ Piperitæ. Dose, gtt. ij–x.

Spiritus Menthæ Piperitæ. Dose, gtt. x–xx.

Trochischi Menthæ Piperitæ.

Aqua Menthæ Viridis. Used as a vehicle.

Oleum Menthæ Viridis. Dose, gtt. ij–x.

Spiritus Menthæ Viridis. Dose, gtt. x–xx.

Action and Uses.—Carminative, stimulant, nervine.

The peppermint is a little stronger than the spearmint.

The troche of peppermint is a popular carminative.

MEZEREUM.—Mezereon.

Origin.—Daphne Mezereum, *Lin.*, and other species of Daphne. *Nat. ord.*, Thymelaceæ.

Habitat.—Europe, in mountainous regions.

Constituents.—Soft acrid resin and oil; daphin.

Officinal Preparations, U. S.

Decoctum Sarsaparillæ Compositum. Dose, f℥iij–iv.

Extractum Mezerei Fluidum. Used in Ung. Mezerei.

Extractum Sarsaparillæ Compositum Fluidum. Dose, f3ss–i.

Unguentum Mezerei. A stimulant dressing.

Action and Uses.—Sialagogue, stimulant, diuretic, alterative; externally, a vesicant.

Rarely used, except in Decoc. Sarsap. Comp.

MOSCHUS.—Musk.

Origin.—From the preputial follicles of the male Moschus Moschiferus, *Lin.*

Habitat.—Central Asia.

Constituents.—Ammonia, an acid, cholesterin, fat, wax, gelatinous and albuminous principles. The odorous principle has not been separated.

Action and Uses.—Diffusible stimulant, aphrodisiac, antispasmodic.

Its high price and frequent adulterations have caused it to be discarded almost entirely. Dose, gr. i–xv.

MYRISTICA.—Nutmeg.

Origin.—Myristica Fragrans, *Houttuyn. Nat. ord.*, Myristicaceæ.

Habitat.—Molucca Islands; cultivated in tropical countries.

Constituents.—Volatile oil, 2 to 8 per cent.; fixed oil, 25 to 30 per cent.; starch, proteids, mucilage.

Officinal Preparations, U. S.

Spiritus Myristicæ. Dose, f3i.

Oleum Myristacæ. Volatile Oil of Nutmegs. Dose, gtt. ij–iij.

Dose in substance, gr. x–xv.

The aryllus of this fruit is known as Mace.

Action and Uses. — Stimulant, stomachic; large dose narcotic.

Rarely used, except for flavoring.

MYRRHA.—Myrrh.

Origin. — Balsamodendron Myrrha, *Nees. Nat. ord.*, Terebinthaceæ, Burseraceæ.

Habitat.—Eastern Africa, and South-western Arabia.

Exudes spontaneously from the bark.

Officinal Preparations, U. S.

Tinctura Myrrhæ (ʒiss to Oi). Dose, fʒss–i.

Tinctura Aloes et Myrrhæ. Dose, fʒi–ij.

Action and Uses. — Stimulant, astringent, tonic, expectorant, emmenagogue, vulnerary. Dose, gr. x–xxx.

NUX VOMICA.—Nux Vomica.

Origin.—Strychnos Nux Vomica, *Lin. Nat. ord.*, Loganiaceæ.

Habitat.—India and East India Islands.

Constituents.—Strychnia, brucia, igosuria (probably impure brucia); proteids, 11 per cent.; fat, gum; sugar, 6 per cent.; igosuric acid. The seeds are the part used.

Officinal Preparations, U. S.

Tinctura Nucis Vomicæ (ʒiv to Oi). Dose, m.v–x.

Extractum Nucis Vomicæ. Dose, gr. $\frac{1}{4}$–$\frac{1}{2}$.

Strychnia (sulphate). Dose, gr. $\frac{1}{60}$–$\frac{1}{20}$–$\frac{1}{8}$.

Antagonists and Incompatibles. — The paralyzers (woorara, conium, tobacco, opium, belladonna, and physostigma) in part.

Physiologically, chloral, bromide of potassium, ether, and chloroform (inhaled).

In poisoning, the vegetable astringents, especially tannin; emetics or stomach-pump; chloral, ether by inhalation, bromide of potassium in large doses (ʒij to ʒss); artificial respiration.

Synergists. —Brucia, picrotoxine, thebaine, ergot; belladonna, electricity, and cold (Bartholow).

Action and Uses.—Tonic, spinal nervine, poisonous.

To diminish the craving for stimulants, and sustain the nervous system: ℞. Tinc. capsici, fʒvi; tinc. nuc. vom., fʒij. M. S. Twenty drops in water every four hours.

For constipation, combined with purgatives: ℞. Tinc. aloes et myrrhæ, fʒvi; tinc. nuc. vom., fʒij. M. Sig. Fifteen to thirty drops two or three times a day.

In tonic pills, it is combined with quinia, iron, and arsenic.

Hypodermic dose ranges from gr. $\frac{1}{120}$ to $\frac{1}{48}$, inserted directly to the atonic part.

OLEUM ÆTHEREUM.—Ethereal Oil. U. S.

Heavy oil of wine is a limpid, almost colorless, volatile fluid, of a pungent taste and vinous odor. Used in Spiritus Æther. Comp.; never used alone.

OLEUM MORRHUA.—Cod-liver Oil.

Origin.—The livers of Gadus Morrhua, *Lin.*, and other species of Gadus.

Habitat.—North Atlantic Ocean.

Constituents.—Chiefly olein, with palmitin and stearin, iodine, traces of chlorine, bromine, phosphorus, and sulphur, biliary compounds, probably also butyric and acetic acids.

The livers are heated slowly, and the oil decanted.

Action and Uses.—Demulcent, alterative; easily digested form of fat.

May be given by inunction; usually in emulsion.

Taken very much like castor-oil. Dose, f℥i–℥ss.

OLEUM OLIVÆ.—Olive-oil.

Origin.—Olea Europæa, *Lin.* *Nat. ord.*, Oleaceæ.

Habitat.—Southern Europe; cultivated.

Constituents.—Mainly olein; solid fats with palmitin, arachin, and stearin, possibly; also, cholesterin.

The crushed fruit, subjected to cold pressure, yields virgin oil; inferior oils are obtained by re-pressing.

Action and Uses.—Demulcent, laxative; nutritious addition to salads.

Dose, f℥i–iv. Used in liniments and ointments.

OLEUM RICINI.—Castor-oil.

Origin.—Ricinus Communis, *Lin.* *Nat. ord.*, Euphorbiaceæ.

Habitat.—India; cultivated.

Constituents.—Ricinolein and palmitin; acrid principle.

(Crushed seeds, freed from their integuments, kiln-dried and expressed.)

Action and Uses.—Demulcent, purgative, with astringency following its use. Dose, from f℥i to f℥i–ij.

Though the best quality has no flavor, it leaves a greasy, sickly sensation, very unpleasant to the palate. To avoid this, the floating dose between two strata of some alcoholic is used; various emulsions; boiling milk effectually conceals it; beer-foam and soda-water also conceal it.

OLEUM SUCCINI.—Oil of Amber.

Amber subjected to destructive distillation gives a volatile oil.

Officinal Preparation, U. S.

Oleum Succini Purificatum. Dose, gtt. x–xx.

Action and Uses.—Stimulant, antispasmodic, irritant; externally, sedative, rubifacient.

Infantile convulsions (Dr. Parrish): ℞. Olei succini rectif., tinc. opii, āā f℥ss; ol. olivæ, spts. vini. gal., āā f℥ij. M. ft. lotio. S. To be rubbed along the spine.

OLEUM THEOBROMÆ.—Cacao Butter.

Origin.—Theobroma Cacao, *Lin.* *Nat. ord.*, Byttneriaceæ (Sterculeaceæ).

Habitat.—South America.

Seeds, deprived of their testa, are expressed between heated plates; yield 40 to 45 per cent.

Constituents.—Stearin, palmitin, olein, probably a little resin.

Action and Uses.—Demulcent; used in making suppositories.

OLEUM THYMI.—Oil of Thyme.

Origin.—Thymus Vulgaris, *Lin.* *Nat. ord.*, Labiatæ.

Habitat.—Southern Europe; cultivated.

Constituents.—Cymene, thymene, and thymol ($C_{10}H_{14}O$).

Action and Uses.—Carminative, tonic, emmenagogue, antispasmodic.

Usually locally applied; thymol is antiseptic.

Dose, gtt. ij–x.

Thymol is advocated as a good disinfectant for dental practice—alveolor abscesses, etc.

OLEUM TIGLII.—Croton-oil.

Origin.—Croton Tiglium, *Lin.* *Nat. ord.*, Euphorbiaceæ.

Habitat.—India; cultivated.

Crushed seed are expressed, or exhausted, by carbon bisulphide; yield 50 to 60 per cent.

Constituents.—Glycerides of formic, acetic, isobutyric, tiglinic, valerianic, lauric, myristic, palmitic, and stearic acids; also, crotonol.

Action and Uses.—Powerful purgative, irritant, rubifacient, vesicant.

Dose, gr. ¼–ij, in fixed oils or emulsion; externally, as an addition to liniments, counter-irritants, etc.

OPIUM.—Opium.

Origin.—Papaver Somniferum, *Lin.* *Nat. ord.*, Papaveraceæ.

Habitat.—Western Asia; cultivated.

(Obtained from the unripe capsule, by incision and spontaneous drying.)

Constituents.—Odorous principle, glucose, mucilage, pectin, caoutchouc, wax, fatty matter, coloring principle; ash, 6 per cent.; meconic acid; lactic acid, 1¼ per cent.; meconin, and numerous alkaloids:

Narcotina, 1 to 11 per cent.; morphia, 3 to 23 per cent.; codeia, 0.2 to 0.4 per cent.; pseudomorphia (phormia), 0.2; thebaina (paramorphia), 0.15 to 1.0 per cent.; narceina, 0.1 to 0.7 per cent.; papaverina, 1 per cent.; rhœadina, cryptopia, lanthopia, meconidia, laudania, codamina, deuteropia, laudanosina, protopia, and hydro-cotarnina.

Officinal Preparations, U. S.

Acetum Opii—black drop (gr. i in m.viss). Dose, m.v–vij.

Confectio Opii (gr. i in 36). Dose, ʒss.

Extractum Opii (double strength of opium). Dose, gr. ss.

Emplastrum Opii (extract, 1 in 16 parts).

Suppositoria Opii (extract, gr. ss).

Pilulæ Opii (each, gr. i).

Pilulæ Saponis Composita (Mass, 20 per cent. of opium).

Pulvis Ipecacuanhæ Comp. (Dover's Powder, gr. 1 in 10). Dose, gr. x.

Tinctura Opii (gr. i in m.xiij). Dose, m.xiij.

Tinctura Opii Acetata (gr. i in m.x). Dose, m.x.

Tinctura Opii Camphorata (gr. i to f℥ss). Dose, f℥i–iv.

Tinctura Opii Deodorata (gr. i in m.xiij). Dose, m.xiij.

Trochischi Glycyrrhizæ et Opii (gr. i in 20 grs.).

Trochischi Morphiæ et Ipecacuanhæ (each, gr. $\frac{1}{40}$).

Liquor Morphiæ Sulphatis (gr. i to f℥i). Dose, f℥i–f℥i.

Suppositoria Morphiæ (each, gr. ss).

Vinum Opii (gr. i in m.viij). Dose, m.viij.

Morphia { Morphiæ Acetas / Morphiæ Muras / Morphiæ Sulphas }. Dose, gr. $\frac{1}{10}$–$\frac{1}{2}$. (One-tenth to one-half grain.)

Antagonists and Incompatibles.—Chemically, alkaline carbonates, lime-water, salts of iron, lead, zinc, copper, mercury, Fowler's Solution; vegetable astringents (tannin).

Physiologically, atropia.

In cases of poisoning, produce emesis, if possible, by ordinary emetics; resort to hypodermic use of apomorphia (dose gr. $\frac{1}{16}$), if the patient is unable to swallow; use stomach-pump, if early; cold affusions, flagellations, or faradization, and artificial respiration. Small doses of atropia sulphate (dose, gr. $\frac{1}{120}$) should be administered, and repeated cautiously until the antagonism is evident. Strong coffee (caffeine) is very useful and convenient. The patient

must be kept awake all the time, if possible, by walking, etc.

Synergists.—Alcohol and its derivatives (notably, chloral), and, within certain limits, the mydriatics; its depressing effect is favored by aconite, veratrum viride, lobelia, gelsemium, etc.; its sudorific action is favored by ipecacuanha.

Action and Uses.—Anodyne, narcotic, sedative, antispasmodic, hypnotic, chiefly due to the morphia present.

Narcotina, antiperiodic and tetanizing; codeia, hypnotic (used in diabetes); thebaina, soporific, excitant, convulsant; narceina, feebly hypnotic; papaverina, hypnotic, sedative; cryptopia, hypnotic.

Opium itself is more diaphoretic than any of its alkaloids, and is the active principle in all pain-killers.

ORIGANUM.—Common Marjoram.

Origin.—Origanum Marjorana and O. Vulgare, *Lin.* *Nat. ord.*, Labiatæ.

Habitat.—Asia Minor and Southern Europe; cultivated; naturalized in North America.

Constituents.—Volatile oil (sp. gr. 89, readily soluble in alcohol).

Officinal Preparation, U. S.

Oleum Origani. Dose, gtt. ij–v.

Action and Uses.—Carminative, stimulant, emmenagogue, cephalic.

It has been superseded by oil of thyme; used only externally, in fomentations.

PAREIRA.—Pareira Brava.

Origin.—Chondodendron Tomentosum, *Ruiz et Pavon*. *Nat. ord.*, Menispermaceæ.

Habitat.—Brazil.

Constituents.—Pelosina, identical with berberina and buxina.

Officinal Preparations, U. S.

Extractum Pareiræ Fluidum. Dose, f℥ss–i.

Infusum Pareiræ. Dose, f℥i–ij.

Action and Uses. Diuretic, tonic (cystic).

PEPO.—Pumpkin-seed.

Origin.—Seed of Curcubita Pepo, *Lin.* *Nat. ord.*, Curcubitaceæ.

Habitat.—Tropical Asia and America; cultivated.

Constituents.—Fixed oils, 40 per cent.; proteids, starch, sugar, resin.

Action and Uses.—Efficient tænicide, in doses of one to two ounces.

The decorticated seeds, beaten into a paste with sugar or milk, are given in the morning fasting, followed in an hour or two by a dose of castor-oil.

PHOSPHORUS.—Phosphorus. P.

Discovered by Brandt, in 1669. He separated it from the phosphates of urine, but it is now procured entirely from the ashes of bones (tricalcic phosphate). It is an important constituent of nerve tissue, and is found in all animal and vegetable juices,

and the mineral phosphates that enrich various soils.

Seen in commerce in cylindrical sticks, pale yellow, transparent, of a waxy luster, and about as hard as beeswax. Easily inflammable in the air, and must be kept and cut under water. Its specific gravity is 1.8.

Officinal Preparations, U. S.

Acidum Phosphoricum Dilutum. Dose, m.x–xl.

Dose, in substance, gr. $\frac{1}{60}$–$\frac{1}{12}$ (sixtieth to twelfth).

Antagonists and Incompatibles.—Turpentine and demulcents, hydrated magnesia, lime-water, powdered charcoal.

Synergists.—Oils and fats; arsenic, in a feeble degree, sulphur.

Action and Uses.—Irritant poison (one to five grains), nervous stimulant and tonic, gr. $\frac{1}{40}$; aphrodisiac.

It enters the blood in an unoxidized condition, being held in solution in the serum. In doses of from one to five grains, it has produced fatal depression of nervous power, especially of the vasomotor system; fatty degeneration of the liver and intestinal glandulæ occurs. In the course of a few days, jaundice, suppression of urine, vomiting of bilious or sanguinolent matters, and a fluid condition of the blood. Resulting ecchymoses in the skin, mucous and serous membranes appear, and the temperature, which has not been increased, rapidly falls.

In medicinal doses (one-fortieth of a grain) it is

a stimulant to the nervous system, and may be given where there is a tendency to nervous prostration and general enfeeblement, as in the early stages of palsy of the insane; also, in cerebral or spinal atrophy.

Has long been regarded as an aphrodisiac, and may be given sometimes with benefit in sexual debility.

Oil is the proper menstruum.

PHYSOSTIGMA.—Calabar-bean.

Origin.—Physostigma Venenosum, *Balfour. Nat. ord.*, Papilionaceæ, Leguminosæ.

Habitat.—Tropical Western Africa, near the mouth of the Niger and Old Calabar.

Constituents.—Physostigma or eserina, calabarina, phytosterin; starch, 40 per cent.; proteids, 23 per cent.; mucilage, ash.

Officinal Preparation, U. S.

Extractum Physostigmatis. Dose, gr. $\frac{1}{6}$–$\frac{1}{3}$.

Antagonists and Incompatibles.—Chemically, vegetable astringents, tannic acid, and caustic alkalies; physiologically, atropia and chloral; therapeutically, the tetanizing agents.

Synergists.—The paralyzers or depressers of the motor-nervous system—conium gelsemium, nitrite of amyl, etc.

Action and Uses.—Sedative, poisonous; contracts the pupil.

In reflex excitability producing spasms, and in

strychnia-poisoning (used hypodermically) is the field of its usefulness.

The doses must be small, ranging experimentally upward from the minimum.

PIMENTO.—Pimento (Allspice).

Origin.—Eugenia Pimenta, *De Candolle*. *Nat. ord.*, Myrtaceæ.

Habitat.—Tropical America; cultivated.

Constituents.—Volatile oil, 3 to 4 per cent.; resin, fat, tannin, sugar, gum, etc.

Officinal Preparation, U. S.

Oleum Pimentæ. Dose, gtt. ij–vi.

Action and Uses.—Stomachic, stimulant, carminative (pulv., gr. xx–xxx).

PIPER.—Black Pepper.

Origin.—Fruit of Piper Nigrum, *Lin.* *Nat. ord.*, Piperaceæ.

Habitat.—India; cultivated in the tropics.

Constituents.—Volatile oil, 1 to 2 per cent.; piperina, pungent resin, fat, ash.

Officinal Preparation, U. S.

Oleo-resina Piperis. Dose, m.i.

Action and Uses.—Acrid stimulant, condiment.

PIX LIQUIDA.—Tar.

Origin.—From different species of Pinus. *Nat. ord.*, Coniferæ.

Constituents.—Acetic acid, aceton, methylic alcohol, mesit, toluol, xylol, cumol, methol; these pass over with the light oil of tar. Naphthalin, pyrene, chrysene, retene, paraffin, phenols, creasote, pyrocatechin, empyreumatic resin.

Juniper tar—oil of Cade—from the wood of Juniperus Oxycedrus, *Lin.*, is more liquid, and of a different odor, though allied to it.

Officinal Preparations, U. S.

Glyceritum Picis Liquidæ (m.xxx in f℥i). Dose, f℥i–iv.

Infusum Picis Liquidæ (tar, 20 per cent). Dose, f℥ss–i.

Unguentum Picis Liquidæ (tar, 50 per cent).

Action and Uses.—Stimulant, irritant, insecticide.

The unofficinal syrup of tar (tar, ℥i in f℥vi), good in bronchitis.

Prof. Ringer advises two-grain pills three times a day for winter cough.

PLUMBUM.—Lead. Pb.

Found in many countries as carbonate, but generally as sulphide (galena), from which it is commercially obtained.

A malleable, ductile, bluish-gray metal, sp. gr. 11.4; deficient in tenacity, soft, leaves mark on paper.

Not used in metallic form, though its salts are numerous and useful.

Officinal Preparations, U. S.

Plumbi Oxidum (litharge).

Liquor Plumbi Subacetatis (Goulard's Extract).

Liq. Plumbi Subacetatis Dilutus (lead-water).

Plumbi Acetas (sugar of lead). Dose, gr. ij–v.

Plumbi Carbonas (white lead).

Plumbi Nitras (a disinfectant—Ledoyen's Solution).

Plumbi Iodidum.

Antagonists and Incompatibles.—Natural waters containing lime, sulphates, carbonates, carbonic acid, mineral and vegetable acids, mineral salts, alkalies, iodide of potassium, vegetable astringents, albuminous solutions, and preparations of opium.

Synergists.—Cold, digitalis, ergot, veratrum viride, and agents that act similarly; copper, mercury, antimony, and agents that promote waste.

Action and Uses.—Astringent, especially the acetate; externally used in plasters, etc., when it is mildly sedative.

Hæmoptysis, treated with acetate, doses gr. ½ to gr. iij.

Summer diarrhea of children: ℞. Plumb. acet., gr. viij; acid. acetic., gtt. vi; tinc. opii deod., gtt. iv; aq. dest., f℥i. M. S. Teaspoonful every 2, 3, or 4 hours (for child two years old).

Enemata of lead and morphia for chronic dysentery: ℞. Plumb. acet., gr. iv; morph. sulph., gr. ss; aq. fevid., f℥i. M. S. Use, and repeat if necessary.

PODOPHYLLUM.—May-apple.

Origin.—Root of Podophyllum Pellatum, *Lin. Nat. ord.* Berberidaceæ.

Habitat.—North America, in rich woods and thickets.

Constituents.—Resin, 4 to 5 per cent.; starch, sugar.

Officinal Preparations, U. S.

Extractum Podophylli. Dose, gr. iv–xv.

Resina Podophylli (incorrectly called podophyllin). Dose, gr. $\frac{1}{8}$ to gr. $\frac{1}{4}$.

Action and Uses.—Alterative, cholagogue, cathartic.

Because of its uncertain and irritant action it is best to commence at one-fourth of a grain and range upward, and to combine it with substances to restrain its action. ℞. Resinæ podophyl., gr. ij; ext. belladon., gr. iij; pil. colocynth. comp., gr. xxxvi. M. ft. pil. No. xii. Sig. One pill at night.

It is recommended for children, to dissolve a grain in a drachm of rectified spirit, and give five or six drops, three or four times a day, on a lump of sugar.

POTASSIUM.—Potassium. K.

Potassium is the metallic base of potassa and the potash salts. Exists abundantly in acids, earths, iodine, bromine, etc., and in the vegetable kingdom.

Discovered by Davy, in 1807, with a powerful voltaic battery. Ordinarily obtained from the carbonates of potassium. A silvery-white metal, specific gravity 0.86, rapidly takes oxygen from air or water; kept under naphtha.

Officinal Preparations, U. S.

Potassa. Caustic Potassa.

Liquor Potassæ. Dose, m.v–xxx.

Potassa cum Calce (equal parts), used as caustic.

Potassii Acetas. Dose, gr. x–ʒi.

Potassii Carbonas Impura (Pearl-ash).

Potassii Carbonas. Dose, gr. x–xxx.

Potassii Carbonas Pura. Dose, gr. x–xxx.

Potassii Bicarbonas. Dose, gr. x–ʒi.

Potassii Bichromas (as an alterative).

Potassii Bitartras (Cream of Tartar). Dose, ʒi–iv.

Potassii Bromidum. Dose, gr. xx–ʒi.

Potassii Chloras. Dose, gr. v–xx.

Potassii Citras. Dose, gr. x–xx.

Potassii Cyanidum. Dose, gr. $\frac{1}{8}$.

Potassii Ferro-cyanidum. Dose, gr. x–xv.

Potassii Hypophosphis. Dose, gr. x–xxx.

Potassii Iodidum. Dose, gr. v–ʒi.

Potassii Nitras. Dose, gr. x–xv.

Potassii Permanganas. Dose, gr. i–v.

Potassii Sulphas. Dose, gr. xx–ʒiv.

Potassii Sulphis. Dose, gr. xv–ʒi.

Potassii Sulphuretum. Dose, gr. ij–v.

Potassii et Sodii Tartras (Rochelle Salts). Dose, ʒss–i.

Potassii Tartras. Dose, ʒi–ʒi.

Antagonists and Incompatibles.—Acids, acidulous salts, metallic salts; vinegar, lemon-juice.

Synergists.—Alkalies; agents promoting waste, mercury, iodides, etc.

Action and Uses.—Locally, escharotic, antiseptic (caustic potassa and bichromate); generally, sedative

(bromide), astringent (chlorate), purgative (acid tartrate, sulphate), diuretic (acetate, nitrate, citrate, acid tartrate), emetic (bichromate, dose, gr. ¾), irritant, corrosive poison (bichromate, large doses), glandular excitant and eliminant (iodide—see Iodine).

Ulcerative stomatitis: ℞. Potas. chlor., ʒi; acid. carbol., fʒss; aq. dest., fʒiv. M. S. Lotion or gargle.

PRUNUS VIRGINIANA.—Wild Cherry.

Origin.—Bark of Prunus (Cerasus, *De Cand.*), Serotina, *Ehrhart. Nat. ord.*, Rosaceæ, Amygdaleæ.

Habitat.—North America, in woods.

Constituents.—Tannin, gallic acid (?), bitter principle, resin, starch, amygdalin, emulsin.

Officinal Preparations, U. S.

Extractum Pruni Virginianæ Fluidum. Dose, fʒi.

Infusum Pruni Virginianæ. Dose, fʒi–iij.

Syrupus Pruni Virginianæ. Dose, fʒss.

Action and Uses.—Tonic, sedative, pectoral.

Very popular in cough mixtures and bitter tonics.

QUASSIA.—Quassia.

Origin.—Wood of Simaruba (Quassia, *Swartz*) Excelsa, *De Cand. Nat ord.*, Simarubaceæ.

Habitat.—Jamaica.

Constituents.—Mucilage, pectin, resin, quassin.

Officinal Preparations, U. S.

Extractum Quassiæ. Dose, gr. i–iij.

Infusum Quassiæ (ʒij to Oi). Dose, fʒi–ij.

Tinctura Quassiæ (ʒi to Oi). Dose, gtt. xx–fʒi.

Antagonists and Incompatibles.—Agents promoting waste or destructive metamorphosis.

Synergists.—Iron, mineral acids, pepsin, bismuth, etc.; alkalies.

Action and Uses.—Tonic, febrifuge.

The infusion as enema, for ascarides vermiculares.

QUERCUS.—Oak.

Origin.—Bark of Quercus Alba, *Lin.* *Nat. ord.*, Cupuliferæ.

Habitat.—North America, in woods.

Constituents.—Tannin, 6 to 11 per cent.; red-brown coloring matter, pectin, resin, etc.

Quercus Alba. Inner bark of Quercus Alba. U. S.

Quercus Tinctoria. Inner bark of Quercus Tinctoria. U. S.

Officinal Preparation, U. S.

Decoctum Quercus Alba (ʒi to Oi). Dose, fʒiv.

Action and Uses.—Astringent.

RHEUM.—Rhubarb.

Origin.—Root of Rheum Officinale, *Baillon*, and probably other species of Rheum. *Nat. ord.*, Polygonaceæ.

Habitat.—Western and Central China.

Constituents. — Chrysophan, Chrysophanic acid, erythroretin, emodin, phæoretin, aporetin, starch, tannin, crystals of calcium oxalate.

OFFICINAL PREPARATIONS, U. S.

Extractum Rhei. Dose, gr. v–xxx.

Extractum Rhei Fluidum. Dose, gtt. x–xxx.

Infusum Rhei (ʒss to Oi). Dose, fʒi–iv.

Pilulæ Rhei (each, gr. iij). Dose, 2 to 8 pills.

Pilulæ Rhei Compositæ (rhei, gr. ij; aloes, gr. iss). Dose, 1 to 4 pills.

Pulvis Rhei Composita, { Rhubarb, ʒiv; Magnesia, ʒxij; Ginger, ʒii }. Dose, ʒss–i.

Syrupus Rhei (ʒiss to Oi). Dose, fʒij–fʒi.

Syrupus Rhei Aromat. (ʒij$\frac{6}{7}$ to Oi). Dose, infantile, fʒss–i.

Tinctura Rhei (ʒiss to Oi). Dose, fʒi–fʒss.

Tinctura Rhei et Sennæ (ʒ$\frac{1}{3}$ to Oi). Dose, fʒss–i.

Vinum Rhei (ʒij to Oi). Dose, fʒi–fʒss.

Action and Uses.—Tonic, astringent, purgative, aperient.

In diarrhea of children: ℞. Infus. rhei, fʒii; pot. bicarb., ʒi; tinc. cinnamomi, fʒij; syr. simp., fʒvi. M. S. Teaspoonful every two hours.

Antacid purgative: ℞. Pulv. rhei, gr. xxx; sodii bicarb., gr. xv; spts. myristicæ, m.xxx; syr. zingerb., fʒi; aq. menth. pip., āā fʒiss. M. S. A draught at night.

RUTA.—RUE.

Origin.—Leaves of Ruta Graveolens, *Lin. Nat. ord.*, Rutaceæ.

Habitat.—Southern Europe; cultivated.

Constituents.—Volatile oil, rutin, resin, etc.

Oleum Rutæ. Dose, gtt. ij–vi.

Action and Uses.—Irritant, stimulant, aphrodisiac, emmenagogue.

The tincture is, at times, efficient as carminative in flatulent colic, and hysteria in women.

In large doses it is an acro-narcotic poison.

As an emmenagogue, its decided effect causes miscarriage. For such, is used unprofessionally.

SABADILLA.—Cevadilla.

Origin.—Seeds of Asagræa (Helonias, *Don*) Officinalis, *Lindley;* Veratrum Sabadilla, *Schlecht. Nat. ord.*, Melanthaceæ.

Habitat.—Mexico to Venezuela.

Constituents.—Veratrina, cevadina, cevadillina, cevadic and veratric acids, fixed oils.

This agent is valuable only as the source of the alkaloid, veratria.

Akin to it, and more fruitful sources of it:

Veratrum Album—White Hellebore.

Veratrum Viride—American Hellebore.

Extractum Veratri Viridis Fluidum. Dose, m.ij–v.

Tinctura Veratri Viridis. Dose, m.i–v.

Officinal Preparations, U. S.

Veratria. Not used externally.

Unguentum Veratriæ (veratria, ℈i; adeps., ʒi).

Antagonists and Incompatibles.—Alcohol, opium, ammonia, heat. When dangerous symptoms are present, the recumbent position must be maintained,

and the patient treated to opium, alcoholic stimulants, and dry heat, according to the case.

Synergists.—Vaso-motor depressants, tobacco, lobelia, aconite, etc. Depletants of all kinds.

Action and Uses.—Irritant; depressant to the respiration, circulation, and nervous system.

The veratria ointment, carefully applied over the locality of superficial neuralgias, is highly recommended by some.

SABINA.—Savine.

Origin.—The tops of Juniperus Sabina, *Lin.* *Nat. ord.*, Coniferæ.

Habitat. — Siberia, Europe, Canada, Northern United States.

Constituents.—Volatile oil, resin, tannin.

Officinal Preparations, U. S.

Ceratum Sabinæ (fl'd ext., f℥iij; resin cerat., ℥xij).

Extractum Sabinæ Fluidum. Dose, gtt. v–xv.

Oleum Sabinæ. Dose, gtt. ij–v.

Action and Uses.—Irritant, diuretic, emmenagogue, vermifuge, abortifacient (in large doses).

Emmenagogue, combined with other oils: ℞. Ol. sabinæ, ol. rutæ, āā f℥i; tinc. polygen. hydropip., f℥i; ol. amygdal. express., mucil. acaciæ, aq. menth. pip., āā f℥ij. M. Sig. Teaspoonful two or three times a day.

SALVIA.—Sage.

Origin.—Leaves of Salvia Officinalis, *Lin.* *Nat. ord.*, Labiatæ.

Habitat.—Southern Europe; cultivated.

Constituents.—Volatile oil, resin, tannin, albumen, extractive, etc.

Officinal Preparation, U. S.

Infusum Salviæ (℥ss to Oi). Used as a gargle.

Action and Uses.—Stimulant, tonic, astringent, aromatic, vulnerary.

The infusion is used sometimes to allay nausea in fevers; also, the *hot* infusion as a diaphoretic.

SANGUINARIA.—Blood-root.

Origin.—The rhizome of Sanguinaria Canadensis, *Lin.* *Nat. ord.*, Papaveraceæ.

Habitat.—North America, in rich woods.

Constituents.—Sanguinaria, citric and malic acids, resins, starch.

Officinal Preparations, U. S.

Acetum Sanguinariæ (℥ij to Oi). Dose, m.x–xxx.

Tinctura Sanguinariæ (℥ij to Oi). Dose, gtt. x–xl.

Antagonists and Incompatibles.—Alkalies, tannic and gallic acids, most metallic salts. Physiological antagonist, opium.

Synergists.—Mineral and vegetable emetics, so-called alteratives of the vegetable kingdom, and mineral salts.

Action and Uses.—Alterative, tonic, stimulant, emetic, sternutatory, expectorant.

In acute bronchitis: ℞. Tinc. sanguinariæ, f℥i; tinc. lobeliæ, f℥i; vin. ipecac., f℥ij; syr. tolut., f℥ss. M. S. Teaspoonful every three hours.

In humid asthma: ℞. Tinc. sanguin. et lobeliæ, āā f℥i; muriat. amm., ℥ij; syr. tolutan., f℥vi. M. Sig. Teaspoonful every two, three, or four hours.

Aphrodisiac, combined with stillingia: ℞. Tinc. sanguin., f℥iij; ext. stilling. fl'd, f℥v. M. S. Ten to twenty drops, in water, three times a day. This is indicated when the parts are relaxed, and diurnal losses of semen, etc., occur.

SANTONICA.—Santonica.

Origin.—Buds of Artemisia Maritima, var. Stechmanniana, *Besser*. *Nat. ord.*, Compositæ.

Habitat.—Turkistan.

Constituents.—Volatile oil, 1 per cent.; santonin, 1 to 2 per cent.; resin, gum, etc.

Officinal Preparations, U. S.

Santonum. Dose, gr. ss–iij.

Trochisci Santonini (each, gr. ss).

Synergists.—Cathartics, especially calomel.

Action and Uses.—Stimulant, anthelmintic.

For ascarides lumbricoides: A laxative in the morning, fasting through the day, a dose of calomel and santonine at bed-hour, and followed by a senna-draught, or some other cathartic, next morning.

Caution: Care must be used, as it sometimes produces intestinal irritation.

SAPO.—Soap.

Soap made with Soda and Olive-oil. U. S.

Officinal Preparations, U. S.

Ceratum Saponis.
Emplastrum Saponis.
Linimentum Saponis.
Pilulæ Saponis Compositum.

Action and Uses.—Only the hard soap enters into pills; both hard and soft, in making liniments and plasters.

Soft or potassa soap—green soap (sapo-viridis)—has been recommended in alcoholic solution (spiritus saponatus kalinis—one part alcohol, two parts soap) in the treatment of chronic eczema.

SARSAPARILLA.—Sarsaparilla.

Origin.—Root of Smilax Officinalis (*Humboldt* and *Bonplandt*), and other species of Smilax. *Nat. ord.*, Smilaceæ.

Habitat.—Tropical America, from Mexico to Brazil.

Constituents.—Parillin (smilacin, parillic acid), traces of volatile oil, starch, resin, coloring matter.

Officinal Preparations, U. S.

Decoctum Sarsaparillæ Comp. (sarsaparilla, sassafras, guaiac, mezereon, and licorice). Dose, f℥ij–iv.

Extractum Sarsaparillæ Fluidum. Dose, f℥ss.

Extractum Sarsaparillæ Fluidum Comp. Dose, f℥ss–i.

Syrupus Sarsaparillæ Compositum (℥iv to Oi). Dose, f℥ss.

Antagonists and Incompatibles. — Alkalies decompose the decoction and fluid extracts.

Iodine antagonizes the starch in it.

Synergists.—Mercury and other alteratives; warm clothing, to excite the skin; diluents, to increase the quantity of urine.

Action and Uses. — Alterative, especially in tertiary syphilis.

Thought to be diuretic and diaphoretic. It is also a good vehicle for iodide potassium.

SASSAFRAS.—Sassafras.

Origin.—Root of Sassafras Officinalis, *Nees. Nat. ord.*, Lauraceæ.

Habitat.—North America, in woods.

Constituents.—Volatile oil, tannin, sassafrid, starch, gum, resin, wax.

Oleum Sassafras. Dose, gtt. i–x.

Officinal Preparation, U. S.

Mucilago Sassafras Medullæ (℥ij to Oi). A collyrium.

Action and Uses.—Stimulant, diaphoretic, alterative.

Infusion is the usual method (℥ss–ij, root).

SCAMMONIUM.—Scammony.

Origin. — Resin from the root of Convolvulus Scammonia, *Lin. Nat. ord.*, Convolvulaceæ.

Habitat.—Western Asia.

Constituents.—Resin, 80 to 93 per cent.; gum. The resin is scammonin, the active part of the agent.

Officinal Preparations, U. S.

Resina Scammonii. Dose (in milk), gr. ij–viij.

Extractum Colocynthidis Compositum. Dose, gr. iv–xxx.

Dose, in substance, gr. v–xv.

Action and Uses.—Hydragogue cathartic.

SCILLA.—Squill.

Origin.—Bulb of Urginea Scilla, *Steinheil;* Scilla Maritima, *Lin.* *Nat. ord.*, Liliaceæ.

Habitat.—Basin of Mediterranean, near the sea.

Constituents.—Mucilage, sugar, crystals of calcium oxalate; active principles are scillipicrin, scillitoxin, scillin.

Officinal Preparations, U. S.

Acetum Scillæ (ʒij to Oi). Dose, m.v–xx.

Syrupus Scillæ. Dose, fʒss.

Pilulæ Scillæ Comp. (squill, gr. ss; ammoniac and ginger, each gr. i). Dose, 1 to 5 pills.

Tinctura Scillæ (ʒij to Oi). Dose, m.v–xx.

Extractum Scillæ Fluidum. Dose, m.iss–iij.

Syrupus Scillæ Comp. (tartar emetic, gr. i in fʒi). Dose, gtt. v–fʒss.

Action and Uses.—Expectorant, diuretic, cathartic, emetic, irritant.

Cough mixture: ℞. Acet. scillæ, fʒss; ext. ipecac. fl'd, fʒss; tinc. opii deodor., fʒi; syr. tolutan., fʒx.

M. S. Teaspoonful every two, three, or four hours.

In chronic bronchitis: ℞. Syr. scillæ, f℥ss; tinc. opii camphorat., f℥ij; muriat. amm., ℥ss; syr. tolut., f℥x. M. S. Teaspoonful every hour, till easy.

As diuretic, it must be used with caution, because of its irritating effects—best to combine it with digitalis: ℞. Infus. digital., f℥iijss; acet. scill., f℥ss. M. S. Tablespoonful every three or four hours.

SCOPARIUS.—Broom.

Origin.—Tops of Sarothamnus Scoparius, *Koch. Nat. ord.*, Leguminosæ, Papilionaceæ.

Habitat.—Western Asia, Southern and Western Europe.

Constituents.—Volatile oil, scoparin, sparteina, tannin, fat, wax, sugar; ash, 5 to 6 per cent.

Action and Uses.—Diuretic, slightly narcotic, in large doses emetic.

Dose, gr. xv–xxx, in decoction.

In the same group with buchu, uva ursi, pareira, and pipsissawa.

Used as active diuretic in dropsy.

SENEGA.—Seneka.

Origin.—Root of Polygala Senega, *Lin. Nat. ord.*, Polygalaceæ.

Habitat.—United States.

Constituents.—Polygalic acid (senegin), 3 per cent.; fixed oil, pectin, coloring matter.

Officinal Preparations, U. S.

Decoctum Senegæ (ʒi to Oi). Dose, fʒss–i.
Extractum Senegæ (alcoholic). Dose, gr. ss–iij.
Extractum Senegæ Fluidum. Dose, m.x–xxx.
Syrupus Senegæ. Dose, fʒi.
Syrupus Scillæ Compositus.

Action and Uses.—Expectorant, emetic, somewhat diuretic.

Usually combined with other expectorants: ℞. Amm. carbonat., gr. iv; tinc. scill., m.xv; ext. glycyrrh., gr. v; infus. senegæ (Br.), ad fʒi. M. ft. haustus. S. To be taken three times a day.

SENNA.—Senna.

Origin.—Leaves of Cassia Acutifolia, *Delile;* Cassia Elongata, *Le Maire—Lesancourt;* Cassia Obovatæ, *De Candolle;* Cassia Marilandica. *Nat. ord.*, Leguminosæ, Cæsalpineæ.

Habitat.—C. Acutif., Eastern and Central Africa; C. Elongat., Eastern Africa to India; C. Mariland., United States.

Constituents.—Chrysophanic acid, phaeoretin, sennacrol, cathartic acid, cathartomannite, mucilage, etc.

Officinal Preparations, U. S.

Confectio Sennæ. Dose, ʒi–ij.
Extractum Sennæ Fluidum. Dose, fʒi–iv.
Infusum Sennæ (ʒi to Oi). Dose, fʒi–iv.
Tinctura Rhei et Sennæ. Dose, fʒss–ij.
Enters also into Syr. Sarsaparillæ Comp.

Action and Uses.—Tonic, astringent and resin-bearing cathartic.

Rarely given alone.

Sulphate of Magnesium (Epsom Salts) makes the black draught: ℞. Infus. sennæ, f℥iv; sulph. magn., ℥i. M.

It combines well with the aromatics.

SERPENTARIA.—Virginia Snake-root.

Origin. — Root of (1) Aristolochia Serpentaria, *Lin.;* (2) A. Recticulata, *Nuttall. Nat. ord.*, Aristolociaceæ.

Habitat.—United States, hilly woods: (1) East of the Mississippi; (2) in the Southern States.

Constituents.—Volatile oil, ½ per cent.; bitter principle, soluble in alcohol and water; little tannin, starch, sugar, albumen.

Officinal Preparations, U. S.

Extractum Serpentariæ Fluidum. Dose, gtt. xx.

Infusum Serpentariæ (℥ss to Oi). Dose, f℥ss–iv.

Tinctura Serpentariæ (℥ij to Oi). Dose, f℥i–ij.

Action and Uses.—Stimulating tonic and expectorant, diaphoretic.

One of the aromatic bitters.

SINAPIS.—Mustard.

Sinapis Alba and Sinapis Nigra. U. S.

Origin.—Seeds of Sinapis Alba and Nigra, *Lin. Nat. ord.*, Cruciferæ, Siliquosæ.

Habitat.—Asia and Southern Europe; cultivated.

Constituents.—The white, fixed oil, 20 to 25 per cent.; mucilage, myrosin, sinalbin, no starch; the black, fixed oil, 25 per cent.; mucilage, myrosin, sinnigrin, no starch.

Officinal Preparation, U. S.

Charta Sinapis. Mustard papers, four inches square.

Action and Uses.—Tonic, laxative, diuretic, emetic, stimulant; externally, rubifacient, epispastic.

Dose, in substance, gr. x–ʒi; a plaster externally.

Method of making the plaster: Mix with cold water. Warm water dissipates the volatile oil, vinegar destroys it, and alcohol prevents its formation. It is to be kept on twenty minutes to a half hour, depending on the effect desired. A blister caused by it is frequently very annoying, and should be avoided.

SODIUM.—Sodium. Na.

Sodium, the metallic base of soda, was discovered by Davy, in 1837. It occurs in nature in sea-water, rock-salt, animal and vegetable juices, combined with chlorine. It is of the consistence of wax, malleable, brilliant, silvery luster; specific gravity 0.972; floats on water, producing a hissing as it energetically combines with it, freeing hydrogen, and forming a protoxide of sodium that remains in solution. In the air it oxidizes, and must be kept under naphtha; burns with a yellow flame.

Sodii Acetas. Dose, gr. xx–ʒij.

Sodii Boras (Borax). Dose, gr. x–xl.

Mel. Sodii Boratis (ʒi to f ʒi).

Glyceritum Sodii Boratis (ʒij to fʒi).

Sodii Carbonas. Enters into many preparations.

Sodii Hypophosphis. Dose, gr. x–xxx.

Sodii Hyposulphis. Dose, gr. x–xx.

Sodii Nitras. (Used in making sodii arsenias.)

Sodii Sulphas (Glauber's Salts). Dose, ʒss–i.

Sodii Sulphis. Dose, ʒi.

OFFICINAL PREPARATIONS, U. S.

Soda. Caustic Soda.

Liquor Sodæ. Dose, well diluted, m.ij–x.

Sodii Arsenias. Dose, gr. $\frac{1}{12}$–$\frac{1}{3}$.

Liquor Sodii Arseniatis. Dose, m.ij–v.

Sodii Bicarbonas. Dose, gr. x–xx.

Pulveres Effervescentes. Soda powders.

Pulveres Effervescentes Aperientes. Seidlitz powders.

Trochischi Sodii Bicarbonatis.

Sodii Carbonas Exsiccata. In making Sodii Arsenias.

Sodii Phosphas. Dose, as a cholagogue, gr. xx–xl; as a purgative, ʒi–ij.

Liquor Sodæ Chlorinatæ. (Labarraque's Solution.)

Dose, fʒss–ij, largely diluted.

Antagonists and Incompatibles. — Acids, acidulous salts, metallic salts, vegetable acids.

Synergists. — Alkalies; agents promoting waste, mercury, iodides, etc.

Action and Uses.—Antacid (bicarbonate), to allay nausea (soda powders), emetic (chloride—table-salt), laxative (phosphate and tartrate). Externally, a solution of common soda (impure bicarbonate)

freely applied, removes fœtid sweat of feet and axilla.

To cleanse the scalp from dandruff, a saturated solution of borax is recommended.

Apthæ in children may be cured with borax and powdered sugar.

Freckles, and sometimes pruritus vaginæ, cured with a saturated solution of borax in rose-water.

Seidlitz Powder: ℞. Sodæ et potassæ tart., ʒij; sodæ bicarb., gr. xl, in one powder; ℞. Acidi tartarici, gr. xxxv, in the other powder. Dissolve first powder in two-thirds of a glass of water, then stir the second powder in, and drink while effervescing. This method obviates the danger of strangling, as in the old way of putting in two glasses of water.

SPIGELIA.—Pink-root.

Origin.—Root of Spigelia Marilandica, *Lin.* *Nat. ord.*, Loganiaceæ.

Habitat.—United States, in rich woods.

Constituents.—Little volatile oil, tasteless resin, bitter principle, tannin, wax, etc.

Officinal Preparations, U. S.

Extractum Spigeliæ Fluidum. Dose, fʒi–ij.

Extractum Spigeliæ et Sennæ Fluidum. Dose, fʒij–iv.

Infusum Spigeliæ (ʒss to Oi). Dose, fʒiij–vi; for child, fʒii–iv.

Action and Uses.—Anthelmintic (round worms), overdose, narcotic, dilates pupil.

As anthelmintic, to be followed by a brisk cathartic.

STILLINGIA.—Stillingia. (Queen's-root.)

Origin.—Root of Stillingia Sylvatica, *Lin.* *Nat. ord.*, Euphorbiaceæ.

Habitat.—Southern United States, in sandy soil.

Constituents.—Pungent resin, fixed oil, starch.

Officinal Preparation, U. S.

Extractum Stillingiæ Fluidum. Dose, m.xx–xl.

Dose, in substance, gr. xx.

Action and Uses.—Alterative, antisyphilitic; in large doses, emetic and cathartic.

As an alterative, it is combined with sarsaparilla.

Unofficinal preparations: Decoction (℥i to Oiij, boiled to Oi), dose, f℥i–ij; tincture (℥ij to Oi), dose, f℥ss–i.

STRAMONIUM.—Stramonium.

(Henbane, Thorn-apple, Jamestown-weed.)

Origin.—Leaves and seeds of Datura Stramonium, *Lin.* *Nat. ord.*, Solanaceæ.

Habitat.—Asia; naturalized in most countries.

Constituents.—Daturia, mucilage, albumen; ash, 17 per cent.

Daturia, the alkaloid, resembles atropia.

Officinal Preparations, U. S.

Extractum Stramonii Foliorum. Dose, gr. $\frac{1}{4}$–$\frac{1}{2}$.

Extractum Stramonii Seminorum. Dose, gr. $\frac{1}{4}$–$\frac{1}{2}$.

Tinctura Stramonii (seeds, ℥ij to Oi). Dose, m.x–xx.

Unguentum Stramonii (ext., ʒi to ʒi).

Antagonists and Incompatibles.—Caustic alkalies, physostigma, opium.

Synergists. — Belladonna, hyoscyamus, digitalis, etc.; agents known as excito-motors.

Action and Uses.—Antispasmodic, narcotic, anodyne, dilates the pupil, diuretic.

Used in asthma.

SULPHUR.—Sulphur. S.

(Washed sulphur, sublimed sulphur, or flowers of sulphur, precipitated sulphur, brimstone.)

Sulphur is found in the proteids, mineral-waters, and also in combination with many metals.

Commercially obtained native, from volcanic regions of the world, Italy and Sicily supplying most of it, from surface and sub-surface beds found near volcanoes.

It is an opaque, brittle, shining solid, having a crystalline fracture. When pure it is pale yellow, but may vary from lemon yellow to greenish, or dark-brown yellow, according to the degree of heat to which it has been subjected. Has insipid taste, crackles when crushed in the hand, from unequal expansion. The washed, sublimed (flowers), and precipitated, are more or less completely pulverized forms. It is freely soluble in boiling alcohol and turpentine; also, in benzol and disulphide of carbon; feebly soluble in ether and chloroform; and is insoluble in water.

It dissolves in most fatty and essential oils.

Officinal Preparations, U. S.

Sulphur Precipitatum. Dose, ʒi–iij.

Sulphuris Iodidum. Not used internally.

Unguentum Sulphuris (sulph., 1 part; lard, 2 parts).

Unguentum Sulphuris Iodidi (sulph. iod., gr. xxx to ʒi).

Antagonists and Incompatibles. — Mineral acids, and also sulphuric acids, decompose the sulphites and hyposulphites; oxidizing substances antagonize it.

Synergists.—Remedial agents that arrest fermentative processes.

Action and Uses.—Externally, stimulant; secondarily, an irritant; internally, laxative (gr. x–xl), antiseptic.

As purgative, the confection (Br.): Sulph., ʒiv; cream of tartar, ʒi, in syrup of orange-peel, fʒiv. M. S. Teaspoonful, or tablespoonful, according to the nature of the case.

TABACUM.—Tobacco.

Origin.—Leaves of Nicotiana Tabacum, *Lin. Nat. ord.*, Solanaceæ.

Habitat.—Tropical and temperate America; cultivated.

Constituents.—Nicotiana, 2 to 8 per cent.; nocotianin, albumen, gum, extractive; ash, 14 to 18 per cent.

Officinal Preparations, U. S.

Infusum Tabaci (ʒi to Oi). Dose, fʒij–iv.

Oleum Tabaci. Not used internally.

Unguentum Tabaci (aq. ext. foliorum, f℥i; adipis, ℥xvi).

Vinum Tabaci. Dose, gtt. xx.

Antagonists and Incompatibles. — Caustic alkalies, tannin, iodides. Physiologically, strychnia, ergot, digitalis, ammonia, alcohols, etc.

Synergists.—Motor depressants.

Action and Uses.—Sedative, emetic, narcotic; externally, sternutatory, enema.

TAMARINDUS.—Tamarind.

Origin.—Preserved fruit of Tamarindus Indica, *Lin.* *Nat. ord.*, Leguminosæ, Cæsalpineæ.

Habitat.—India and Tropical Africa; naturalized in the West Indies.

Constituents. — Tartaric, citric, malic, and acetic acids, in potassium combinations; also, sugar, pectin, tannin.

Action and Uses.—Laxative. Dose, ℥ss–v; more in confections.

TARAXACUM.—Dandelion.

Origin.—Root of Taraxacum Dens-leonis, *Desf.* *Nat. ord.*, Compositæ.

Habitat.—Grassy places and road-sides of Europe; naturalized in United States.

Constituents.—Early in spring contains uncrystallizable sugar, which disappears during the summer. In the autumn, it contains 24 per cent. of inulin, and some pectin. The milk-juice contains the bit-

ter crystalline principle taraxacin, and an aglutinous resin.

Taraxacin is soluble in water and alcohol.

Officinal Preparations, U. S.

Extractum Taraxaci. Dose, gr. xx–xxx.

Extractum Taraxaci Fluidum. Dose, f℥i–ij.

Infusum Taraxaci (℥ij to Oi). Dose, f℥ij–iv.

Succus Taraxaci. Dose, f℥ij–iv.

Action and Uses.—Deobstruent, tonic in hepatic disorders.

Deranges digestion, if continued for a long time.

TEREBINTHINA.—Turpentine.

Origin.—Tough, yellowish masses of gum-resin from Pinus Australis, *Mich.* (P. Palustris, *Miller*); and P. Tæda, *Lin.* *Nat. ord.*, Coniferæ.

Habitat.—Southern United States.

Constituents.—Volatile oil, 20 to 30 per cent.; abietic acid, and other resin acids.

Action and Uses.—Stimulant, diuretic, diaphoretic, astringent. Dose, gr. x–xl, pills.

Terebinthina Canadensis—Canada Turpentine.

Origin.—Oleo-resin of Abies Balsamea, *Marshall.* *Nat. ord.*, Coniferæ.

Habitat.—Canada and Northern United States.

Constituents.—Volatile oil, 25 to 30 per cent.; uncrystallizable resin, and bitter principle, soluble in water.

Action and Uses.—Stimulant, diaphoretic, diuretic; mostly used externally.

OLEUM TEREBINTHINÆ—Oil of Turpentine.

The volatile oil distilled from most of the species of Pinus.

Dose of the oil, m.x–xx, given three or four times a day, in typhoid fever or dysentery; or, f℥i–f℥ss, as a vermifuge.

OFFICINAL PREPARATION, U. S.

Linimentum Terebinthinæ.

Antagonists and Incompatibles.—Agents that promote waste, and the vaso-motor depressants.

In case of poisoning, anodynes and demulcents should follow the evacuation of the stomach.

Synergists.—The diffusible and alcoholic stimulants.

Action and Uses.—Stimulant, diaphoretic, diuretic, astringent.

Chronic intestinal catarrh: ℞. Ol. terebinth., f℥i; ol. amygdal. express., f℥ss; tinc. opii, f℥ij; mucil. acaciæ, f℥v; aq. laur-cerasi, f℥ss. M. S. Teaspoonful every three, four, or six hours, as indicated.

Anthelmintic, half an ounce combined with an ounce of castor-oil—for round worms and tænia.

Acts happily in chronic, cystic, and urethral inflammations, because of its rapid elimination through the kidneys.

Locally, stupes, liniments and vaporizations, etc.

UVA URSI.—BEAR-BERRY.

Origin.—Leaves of Arctostaphylos Uva Ursi, *Sprengel.* *Nat. ord.*, Ericaceæ.

Habitat.—Northern Hemisphere, in dry, sandy places.

Constituents.—Tannin, gallic acid, arbutin, ericolin, ursone (tasteless crystals).

OFFICINAL PREPARATIONS, U. S.

Decoctum Uvæ Ursi (ʒi to Oi). Dose, fʒi–iv.

Extractum Uvæ Ursi Fluidum. Dose, fʒi–ij.

Action and Uses.—Astringent, tonic, diuretic, nephritic.

Its astringency acts electively on the genito-urinary tract—its widest field of usefulness.

VALERIANA.—VALERIAN.

Origin.—Root of Valeriana Officinalis, *Lin. Nat. ord.*, Valerianaceæ.

Habitat.—Europe and Northern Asia; naturalized in New England, in moist and dry localities; cultivated.

Constituents.—Volatile oil, valerianic, formic, and acetic acids, tannin, resin, starch, mucilage.

OFFICINAL PREPARATIONS, U. S.

Extractum Valerianæ. Dose, gr. x–xxx.

Extractum Valerianæ Fluidum. Dose, fʒi.

Infusum Valerianæ (fʒi to Oi). Dose, fʒij–iv.

Oleum Valerianæ. Dose, gtt. ij–v.

Tinctura Valerianæ (ʒij to Oi). Dose, fʒi–ij.

Tinctura Valerianæ Ammoniata (ʒij to Oi). Dose, fʒi–ij.

Antagonists and Incompatibles.—Quinia, digitalis, ergot, and similar agents.

Synergists.—Cerebral excitants—opium, alcohol, etc.

Action and Uses.—Stimulant, anodyne, antispasmodic, nervine.

Nervous headache: ℞. Tinc. valerianæ amm., f℥i. M. S. One to two teaspoonfuls every three or four hours. This may be combined with the tincture of aconite root with good effect.

ACIDUM VALERIANICUM.—Valerianic Acid.

This is the odorous principle, and rapidly appears in the urine and sweat. It is a colorless liquid of oily consistence, penetrating, disagreeable odor, and caustic taste.

Its officinal preparations are (U. S.), Valerianas Ammonii, Valerian. Quiniæ, Valerian. Zinci.

The doses range from gr. i to gr. v.

ZINCUM.—ZINC. Zn.

Zinc is found abundantly in nature in various combinations, the silicate (calamine) and the carbonate (blende) being most common.

It is obtained commercially by smelting the ores of lead and zinc.

The salts are usually colorless, soluble in water, of acid reaction, disagreeable taste. By long heating, most of them are converted into the oxide.

OFFICINAL PREPARATIONS, U. S.

Zinci Oxidum. Dose, gr. ij–viij.

Zinci Oxidum Venale. Ung. Zinci Ox. (one to five parts).

Zinci Chloridum. Caustic and astringent.

Zinci Acetas. Collyrium (gr. ss–ij to f℥i).

Zinci Carbonas Precipitata.

Zinci Sulphas (white vitriol). Dose, emetic, gr. x–xxx.

Zinci Valerianas (pill). Dose, gr. i–ij.

Ung. Benzoicum Ox. Zinci (zn. ox., gr. lxxx to ung. benz., gr. cccc).

Antagonists and Incompatibles.—Lime-water, the alkalies and their carbonates, nitrate of silver, vegetable astringents, acetate of lead.

Synergists.—The mercurial, silver, antimonial, and copper compounds.

Action and Uses.—Caustic (chloride), astringent, tonic, specific emetic, antispasmodic.

Summer diarrhea of children, with bismuth and pepsin: ℞. Zinci ox., gr. viij; bismuth subnit., ʒiss; pepsin. sach., ʒi. M. ft. pulv. No. xij. Sig. One powder every three to six hours.

Chronic dysentery, combined with opium and ipecac: ℞. Sulph., pulv. opii, pulv. ipecac., āā gr. xij. M. ft. pil. No. xij. S. One pill three or four times a day.

Whooping-cough, the sulph. zinc. (gr. ¼–i), and ext. belladonna (gr. ⅙–ss), used with success.

Nervine tonic: ℞. Zinc. Valerian., gr. xxiv; confect. rosæ, q. s. M. ft. pil. No. xij. S. One pill twice or thrice a day.

Chronic alcoholismus: ℞. Zinc. ox., ʒi; piperin., ℈i. M. ft. pil. No. xx. S. One pill every three or four hours.

Gonorrhea: ℞. Zinc. sulph., gr. viij; acid. tannic., gr. vi; glycerin., fʒij; aq. dest., fʒvi. M. S. Inject three or four times a day. To be used after an

injection of reasonably pure water, to wash out the urethra.

ZINGERIBER.—Ginger.

Origin.—Rhizome of Zingeriber Officinale, *Roscoe.* *Nat. ord.*, Zingeriberaceæ.

Habitat.—India; cultivated in the tropics

Constituents.—Volatile oil, resin (to which the hot taste is due), starch, mucilage, etc.

Officinal Preparations, U. S.

Extractum Zingeriberis Fluidum. Dose, m.x–xx.

Infusum Zingeriberis (ʒss to Oi). Dose, fʒij–iv.

Oleo-resina Zingeriberis. Dose, m.ss–ij.

Syrupus Zingeriberis. As a vehicle.

Trochischi Zingeriberis (each contains m.ij of tincture).

Dose, in substance, gr. x–xv.

Action and Uses. — Agreeable stimulant, carminative, rubifacient, anodyne. As a flavoring.

APPENDIX.

TABLES OF WEIGHTS AND MEASURES.

WEIGHTS AND MEASURES OF U. S. PHARMACOPÆIA.

One pound, ℔	= 12 Troy ounces	=	5760 grains.
One Troy ounce, ℥	= 8 drachms	=	480 grains.
One drachm, ʒ	= 3 scruples	=	60 grains.
One scruple, ℈		=	20 grains.
One grain, gr.		=	1 grain.

1 minim, ♏.
60 minims = 1 fluid drachm, fʒ.
480 minims = 8 fluid drachms = 1 fluid ounce, f℥.
7680 minims = 128 fluid drachms = 16 fluid ounces = 1 pint, O.
61440 minims = 1024 fluid drachms = 128 fluid ounces = 8 pints [= 1 gal. Cong.

METRIC WEIGHTS AND MEASURES OF THE FRENCH CODEX AND GERMAN PHAR.

The unit of all metric measures is the *meter* (French *mètre*), and this is the ten-millionth part of the quadrant, or fourth part of the terrestrial meridian, the quadrant being the distance from the equator to the pole. The cube of the tenth part of a meter, denominated *liter* (Fr. *litre*), was adopted as the unit of measures of capacity. The weight of the one-thousandth part of a liter of distilled water at its greatest density (4° C.; 24.8° F.) was denominated *gram* (Fr. *gramme*), and adopted as the unit of weight. The subdivisions of all measures are named by prefixing to the name of the unit the Latin numerals *deci* (.1), *centi* (.01), and *milli* (.001); and the larger denominations by prefixing the Greek numerals *deka* (10), *hekto* (100), *kilo* (1000), and *myria* (10,000).

1 milligram = 0.001 gram.
10 milligrams = 1. centigram = 0.010 gram.
100 milligrams = 10. centigrams = 1. decigram = 0.100 gram.
1000 milligrams = 100. centigrams = 10. decigrams = 1.000 gram.

1 gram (weight of 1 cubic centimeter of water at 4° C.).
10 grams = 1 dekagram.
100 grams = 10 dekagrams = 1 hektogram.
1000 grams = 100 dekagrams = 10 hektograms = 1 kilogram.

1 milliliter (or 1 cubic centimeter) = 0.001 liter.
10 milliliters = 1 centiliter = 0.01 liter.
100 milliliters = 10 centiliters = 1 deciliter = .10 liter.
1000 milliliters = 100 centiliters = 10 deciliters = 1.0 liter.

1 liter (or 1 cubic decimeter).
10 liters = 1 dekaliter.
100 liters = 10 dekaliters = 1 hektoliter.
1000 liters = 100 dekaliters = 10 hektoliters = 1 kiloliter.

WEIGHTS AND MEASURES OF THE BRITISH PHARMACOPÆIA.

One pound, ℔ = 16 ounces = 7000 Troy grains = 1℔ ℥ ij ʒ iv gr.xl.
One ounce, oz. = 437.5 Troy grs. = ʒ vij gr. xvijss.
One grain, gr. = 1 grain.

The pound and ounce of the Br. Pharm. are identical with the same denominations of *avoirdupois weight*. The avoirdupois ounce is subdivided into 16 drachms (1 drachm = 27.34 Troy grains); but the Br. Pharm. recognizes no subdivisions between the ounce and grain. It is, however, optional with the physician in prescribing to use the symbols ℈ and ʒ, the former representing 20 and the latter 60 grains, if such should conduce to accuracy or convenience.

			Troy grs.
1 minim, min.			= 0.91.
60 minims=	1 fluid drachm, fl. dr.		= 54.7.
480 minims=	8 fl'd drachms=	1 fluid ounce, fl. oz.	= 437.5.
9600 minims=	160 fl'd drachms=	20 fl'd ozs.=1 pint, O=	8750.
76800 minims=	1280 fl'd drachms=	160 fl'd ozs.=8 pints	=70000.

APPROXIMATE MEASURES.

In the United States and in Great Britain prescriptions are compounded by weighing the solids and measuring the liquids; but on the Continent of Europe weights alone are employed in the making of preparations and in the compounding of prescriptions. Medicines are, however, taken by familiar domestic measures, which are subject to considerable variations, but are usually estimated as having the following capacity:

	In the United States.	In France.
A teaspoonful,	One fluid drachm,	5 grams of water.
A dessertspoonful,	Two fluid drachms.	
A tablespoonful,	Half a fluid ounce,	20 grams of water.
A wineglassful,	Two fluid ounces.	
A glassful,		160 grams of water.
A teacupful,	Four fluid ounces.	
A tumblerful,	Eight fluid ounces.	

Gutta—a drop—is very uncertain, depending on the viscidity of the liquid, size and shape of the vessel, the curvature of the lip, the temperature, the rapidity of dropping, and probably other circumstances. Between aqueous liquids and others the difference ranges from 50 to 200 per cent. Hence, the drop should give place to weight or measure; and this may be approximated by each *minim* to contain of

Ether and ethereal solutions.....2½ to 3 drops.
Tinctures, alcoholic solutions, and volatile oils, 1½ to 2 or 2½ drops.
Medicated wines.....1 to 1½ drops.
Water and aqueous solutions.....¾ to 1 drop.

TABLE OF ELEMENTS.

	Symbols.	Atomic Value.	Atomic Weight.
Aluminium	Al.	III	27.5
Antimony (Stibium)	Sb.	III, V	122.
Arsenic	As.	III, V	75.
Barium	Ba.	II	137.
Beryllium	Be.	II	9.5
Bismuth	Bi.	III, V	210.
Boron	B.	III	11.
Bromine	Br.	I	80.
Cadmium	Cd.	II	112.
Cæsium	Cs.	I	133.
Calcium	Ca.	II	40.
Carbon	C.	II, IV	12.
Cerium	Ce.	II, VI	92.
Chlorine	Cl.	I	35.5
Chromium	Cr.	III, VI	52.5
Cobalt	Co.	II, VI	58.8
Copper (Cuprum)	Cu.	II	63.5
Decipium	Dp.	II	106.
Didymium	D.	II	96.
Erbium	Eb.	II	112.5
Fluorine	F.	I	19.
Gallium	Ga.	I	68.
Gold (Aurum)	Au.	I, III	197.
Hydrogen	H.	I	1.
Ilmenium	Il.	V	105.
Indium	In.	II	75.6
Iodine	I.	I	127.
Iridium	Ir.	IV	198.
Iron (Ferrum)	Fe.	II, III, VI	56.
Lanthanum	La.	II	93.6
Lavœsium	Lv.	?	?
Lead (Plumbum)	Pb.	II, IV	207.
Lithium	Li.	I	7.
Magnesium	Mg.	II	24.

	Symbols.	Atomic Value.	Atomic Weight.
Manganesium	Mn.	II, IV, VI	55.
Mercury (Hydrargyrum)	Hg.	II	200.
Molybdenum	Mo.	VI	96.
Mosandrium	Ms.	II	?
Neptunium	Np.	V	118.
Nickel	Ni.	II, VI	58.8
Niobium	Nb.	V	94.
Nitrogen	N.	I, III, V	14.
Osmium	Os.	IV	199.
Oxygen	O.	II	16.
Palladium	Pd.	IV	106.6
Phillipium	Pp.	II	74.
Phosphorus	P.	III, V	31.
Platinum	Pt.	IV	198.
Potassium (Kalium)	K.	I	39.
Rhodium	Rh.	IV	104.4
Rubidium	Rb.	I	85.4
Ruthenium	Ru.	IV	104.4
Selenium	Se.	VI	79.4
Silicium	Si.	IV	28.
Silver (Argentum)	Ag.	I	108.
Sodium (Natrium)	Na.	I	23.
Strontium	Sr.	II	87.5
Sulphur	S.	II, IV, VI	32.
Tantalum	Ta.	V	182.
Tellurium	Te.	VI	128.
Terbium	Tb.	II	98.
Thallium	Tl.	III	204.
Thorium	Th.	II, IV	235.
Tin (Stannum)	Sn.	II, IV	118.
Titanium	Ti.	IV	50.
Tungsten, or Wolfram	W.	VI	184.
Uranium	U.	IV, VI	240.
Vanadium	V.	V	51.2
Ytterbium	Yb.	II	115.?
Yttrium	Y.	III	92.
Zinc	Zn.	II	65.
Zirconium	Zr.	IV	89.6

Abbreviations Used in Writing Prescriptions.

Abbreviation.	Latin.	English.
āā	Ana.	Of each.
Ad lib.	Ad libitum.	At pleasure.
Ad saturand.	Ad saturandum.	Until saturated.
Aq. ferv.	Aqua fervens.	Hot water.
Aq. tepid.	Aqua tepida.	Warm water.
Chart.	Chartula.	A small paper.
Coch. mag.	Cochlear magnum.	A tablespoonful.
Coch. parv.	Cochlear parvum.	A teaspoonful.
Colent.	Colentur.	Let them be strained.
Collyr.	Collyrium.	An eye-water.
Contus.	Contusus.	Bruised.
F. vel ft.	Fiat vel fiant.	Let them be made.
Fol.	Folium vel folia.	A leaf or leaves.
Garg.	Gargarisma.	A gargle.
Gtt.	Gutta vel guttæ.	A drop or drops.
Haust.	Haustus.	A draught.
Infus.	Infusis.	An infusion.
M.	Misce.	Mix.
Mass.	Massa.	A mass.
Mist.	Mistura.	A mixture.
Pil.	Pilula vel pilulæ.	A pill or pills.
Pulv.	Pulvis vel pulveres.	A powder or powders.
Q. s.	Quantum sufficit.	A sufficient quantity.
℞	Recipe.	Take.
Rad.	Radix.	A root.
S.	Signa.	Write.
Ss.	Semis.	The half.
Tinct. vel tr.	Tinctura.	A tincture.

OBTUNDENTS OF SENSITIVE DENTINE.

Dryness, mechanical and chemical. The former, by absorbents, hot air, etc.; the latter, by materials having an infinity for the water of the dentine, as glycerine, alcohol, or either of these combined with tannic acid, chloride of zinc, tincture of aconite root, etc.

Dr. Shumway's method: Two parts of glycerine to one part of tincture of aconite root.

Dr. S. J. McDougall's:

℞.

Alcohol. absolut. .....f℥ ss.
Glycerinæ. .....f℥ ss.
Acidi tannici .....f℥ ss.

M.

Also:

℞.

Alcohol. absolut. .....f℥ ss.
Glycerinæ.....f℥ ss.
Zinci chloridi.....f℥ ss.

M.

Formula of Weatherbee's "Dental Obtundent:"

Concentrated solution of phosphoric acid.....f℥ i.
Chloroform.....f℥ ij.
High-proof alcohol .....f℥ vi–viij.
Sulphate of morphia.....gr. cxxv.

These to be rubbed together in a mortar.

TABLE OF POISONS AND ANTIDOTES.

In all cases of poisoning, the first step is to evacuate the stomach, which should be effected by one of those emetics which is most powerful and speedy in its operation, as sulphate of zinc, or sulphate of copper. When vomiting has already taken place, copious draughts of warm water or mucilaginous drinks should be given, to keep up the effect till the poisoning substance has been evacuated. If vomiting cannot be produced, the stomach-pump must be used.

Inflammation of the stomach, congestion of the brain, and other symptoms, are to be treated on general principles, viz., by blood-letting, cold applications, revulsives, cool mucilaginous drinks, milk, lime-water, etc. When prostration exists, stimulants should be resorted to, as in other cases.

The following is a list of the usual poisoning substances, with the appropriate remedies:

Poisons.—Acids. *Antidotes.*—The alkalies. Common soap (soft or hard) in solution is an efficient remedy, and has the advantage of being always at hand. It should be followed by copious draughts of tepid water or flaxseed tea. For nitric and oxalic acids, the carbonates of magnesia and lime (chalk and water) are the best antidotes. When sulphuric acid has been taken, the use of much water will be improper.

Alkalies and their salts. *Antidotes.*—The vegetable acids. Common vinegar being always at hand, is most frequently used. The fixed oils, as castor, flaxseed, almond, and olive oils, form soaps with the alkalies, and thus, also, destroy their caustic effect. They should be given in large quantities.

Earths—Baryta and its salts, Lime. *Antidotes.*—Epsom or Glauber's Salts, in solution, or diluted sulphuric acid. The fixed oils also have the same effect as with the alkalies proper when not in a compound state.

Iodine; Iodide of Potassium. *Antidotes.*—Starch, or wheat-flour, in large quantities well mixed with water. For Iodide of Potassium, there being no antidote, vomiting must be promoted by copious draughts of warm water.

Antimony and its salts. *Antidotes.*—Astringent Infusions, as of galls, oak bark, Peruvian bark, or green tea, very strong.

Arsenic and its compounds. *Antidotes.*—Hydrated Peroxide of Iron (freshly prepared), in tablespoonful doses every five or ten minutes, or better, "Dialysed Iron," in teaspoonful doses. Freshly precipitated Magnesia, Demulcents, etc.

Bismuth and its compounds. *Antidotes.*—Albumen. Copious draughts of milk, combined with sweet mucilaginous drinks.

Copper and its compounds. *Antidotes.*—Albumen, as milk or whites of eggs in solution, should be freely administered. Vinegar must be avoided.

Gold, salts of. *Antidote.*—Sulphate of Iron, with a free use of mucilaginous drinks.

Iron, salts of. *Antidote.*—Carbonate of Soda, with mucilaginous drinks.

Lead, salts of. *Antidotes.*—Sulphate of Magnesia (Epsom Salts), or diluted sulphuric acid.

Mercury, salts of. *Antidotes.*—Albumen, as whites of eggs, milk, or wheat-flour beaten up with water.

Silver, salts of. *Antidotes.*—Common salt (chloride of sodium), largely given; white of egg or milk, followed by an emetic.

Tin, salts of. *Antidotes.*—Albumen. Whites of eggs, milk, or flour.

Zinc, salts of. *Antidotes.*—Albumen, or carbonate of soda, with copious draughts of warm water, and especially milk.

Phosphorus. No chemical antidote; therefore get the poison out of the system as soon as possible, by stomach-pump or an emetic of sulphate of zinc. Give cathartic, if the poison has reached the intestines. *Give no oily or fatty matter.* Old oil of turpentine has been used with advantage—the older the better.

Gases. *Antidotes.*—Ammonia, cautiously inhaled, is recommended for chlorine. Asphyxia produced by carbonic acid or carbonic oxide gases or sulphuretted hydrogen, must be treated by copious affusions of cold water, especially to the head, blood-letting, artificial respiration, stimulants carefully administered, etc.

Creasote. *Antidotes.*—Albumen, or whites of eggs, milk, or wheat-flour.

Alcohol or spirituous liquors. *Antidotes.*—A powerful emetic should be given, followed by copious draughts of warm water. Con-

gestion of the brain, and other symptoms, to be treated on general principles.

Opium and other narcotics. *Antidotes.*—The chief reliance is to be placed on the most active emetics (as tartar emetic, sulphate of copper, or sulphate of zinc), and the stomach-pump. Emetics are preferable to the stomach-pump when the narcotic has been taken in substance. The patient should be kept in motion, and cold water dashed on the head and shoulders. Blood-letting may become necessary to relieve congestion. After other remedies fail, artificial respiration should be resorted to. Strong hot coffee, a teacupful alternately with vinegar and water, may be useful. Electro-magnetism has also been efficacious.

Poisonous serpents. *Antidotes.*—A cupping-glass over the wound, or a tight ligature above it; cauterization of wound. Warm diluent drinks and small doses of ammonia to promote perspiration. Whisky has been given in large doses. Bibron's antidote is as follows: ℞. Potass. Iodid., gr. iv; Hydrarg. chlor. corros., gr. ij; Brominii ʒv. M. Ten drops in a tablespoonful of wine or brandy, repeated if necessary.

REMEDIES IN FREQUENT USE,
BUT COMPARATIVELY NEW.

BRAYERA.—Kooso.

Origin.—The flowers and unripe fruit of Brayera Anthelmintica, *Kunth. Nat. ord.*, Rosaceæ, Roseæ.

Habitat.—Table-land and mountains of Abyssinia.

Constituents.—An acrid bitter resin, 6.25 per cent.; tannin, 24.4 per cent.; ash, 15.71 per cent.; wax, sugar, gum.

Officinal Preparation, U. S., Br.

Infusum Kooso. Dose, f℥ ss–i.

Action and Uses.—Anthelmintic, especially as a teanicide.

It is to be given fasting in the morning, and followed by a brisk cathartic in three or four hours.

Abyssinian method: Infusion is made with water or beer, or the flowers are mixed with honey to the amount of from four to six drachms, and the whole is taken in the morning, fasting, and no food taken all day. The tape-worm is usually expelled in from twelve to twenty-four hours.

EUCALYPTUS GLOBULUS. [Ph. B.]

Origin.—Leaves of Eucalyptus Globulus, *Labill. Nat ord.*, Myrtaceæ.

Habitat.—Tasmania; cultivated in Europe, Northern Africa, Southern United States, and California.

Constituents.—Hartzer (1876) found tannin, cerylic alcohol, a crystallizable fatty acid, and three resins. Many other constituents have been found, but the most important is the dextrogyre volatile oil, composed of eucalyptol, terpene, and cymol.

Action and Uses.—An excellent antiseptic, rapidly destructive to infusoria.

It paralyzes the spinal cord and medulla, a period of excitement

rapidly giving way to profound muscular weakness, loss of reflex sensibility, and finally death by respiratory failure. The pulse loses its force, temperature is lowered, urea is increased.

Therapeutically the drug is antiperiodic; and is thought to reclaim malarious districts. This is strongly doubted by later experimenters.

Recommended in bronchitis and asthma.

Dose, of the tincture, f℥ ss–ij. Oil is its best form; dose, gtt. v–x.

JABORANDI.—Jaborandi.

Origin.—Leaflets of Pilocarpus Pennatifolius, *Lemaire.* *Nat. ord.*, Rutaceæ, Xanthoxyleæ.

Habitat.—Brazil, near Pernambuco.

Constituents.—Byasson (1875) obtained a volatile oil and an alkaloid pilocarpina or pilocarpin, upon which its power depends.

Action and Uses.—When taken (thirty to ninety grains in boiling water) a diffused glow is soon felt, followed by profuse perspiration. Temperature falls, circulation excited. It is thought to be the only direct and essential diaphoretic known. It is also galactagogue. It produces flushing, etc., like atropia, but is its antagonist upon the mammary, sudoral, and salivary secretions, and on the pupils and minute arteries.

Pilocarpin, or its muriate, injected hypodermically, acts as jaborandi, and is less apt to produce vomiting.

Therapeutically, it is confined to lessening the fluids in the system. Dropsy of Bright's disease is met by it most happily. To avoid vomiting, it may be given by anema. May be given in infusion (ninety grains to four ounces; dose, one ounce), and a concentrated tincture representing thirty grains to the fluid drachm.

Pilocarpin, dose, gr. $\frac{1}{2}$ to $\frac{3}{4}$, by mouth; gr. $\frac{1}{4}$, hypodermically.

LAURO-CERASI FOLIA.—Cherry-laurel Leaves. [Ph. B.]

This drug contains prussic acid, but, as it is very variable, its use cannot be advised.

LIQUOR FERRI DIALYSATUS.—Dialysed Iron.

A recent preparation rapidly coming into favor. Its merits are: Has no styptic taste, mixes with water in any proportion, does not stain the teeth, or produce constipation.

Some experimenters cast serious doubt on it.

Dose, thirty drops, three or four times a day.

Its use as an antidote to arsenic is questioned by some authors.

PETROSELINUM.—Parsley.

Origin.—The root of Petroselinum Sativum, *Hofm.;* S. Apium Petroselinum, *Lin.* *Nat. ord.*, Umbelliferæ, Orthospermæ.

Habitat.—Southern Europe.

Constituents.—Starch, sugar, volatile oil, and apiin. Joret and Homalle (1855) separated apiol from parsley.

Action and Uses.—Carminative, discutient, diuretic, emmenagogue. Also thought to be antiperiodic.

As an emmenagogue, is the field where it is thought to be of unquestionable benefit.

Powdered seeds may be given in doses of from ten to fifteen grains; strong infusion of root is used.

Apiol is given two or three times a day, in doses of five or six drops, in capsules.

To be given four or five days before the "period," when used as an emmenagogue.

Acknowledgment.

The author makes grateful acknowledgment to the works of Gubler, Bartholow, Farquharson, Ringer, Headland, Stillè and Maisch (U. S. Dispensatory), Maisch, Biddle, Fowne, and Stocken, from which valuable assistance was derived.

General Index.